JULY 1955

AMERICAN ARTISAN

WARM AIR HEATING

RESIDENTIAL AIR CONDITIONING

SHEET METAL CONTRACTING

CONSTANT AIR PATTERN NEW SIMPLIFIED INSTALLATION

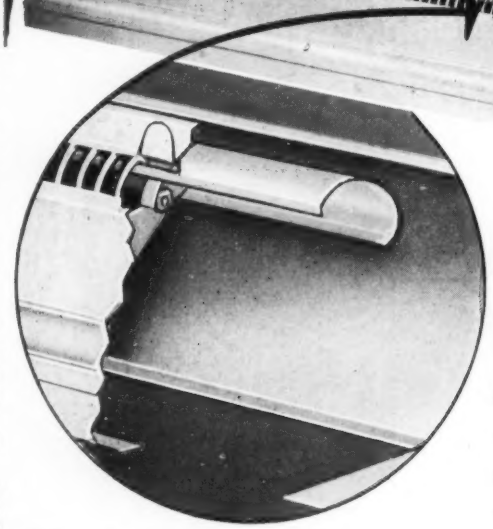
DUCT CONNECTION AT ANY POINT NEW SILENT AT ANY VOLUME SETTING

SILENT AT ANY VOLUME SETTING NEW DUCT CONNECTION AT ANY POINT

AIR CONTROL

AIR CONTROL PRESENTS THE **New** NO. 188

BASEBOARD DIFFUSERS



with New built-in ROTARY DAMPER

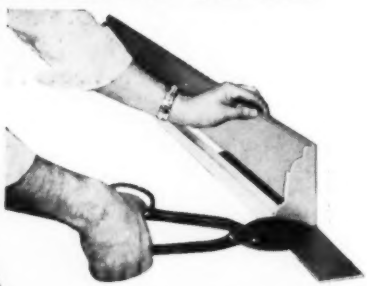
Here, at last, is the diffuser you've been looking for with the new, exclusive, built-in rotary damper . . . now an integral part of the face. See it — compare it — Air Control's rotary damper is the only damper engineered to maintain a constant pattern and velocity at any opening. Gone forever are annoying whistles and wall scrubbing; an end to expensive call-backs and troublesome installations. For heating or cooling it can't be beat.

The finest, most efficient diffuser damper ever built

Uniform air pattern regardless of volume. Silent at any degree of opening. Simpler and faster to install. Easily balanced at the face. It can't be matched!

Plus New ADJUSTO BOTTOM

Saves installation time and cost and permits installation at any duct location. Simply locate desired position of duct . . . pull out Adjusto Bottom . . . snip off the excess bottom . . . insert into other end of diffuser, and complete installation.



ORDER TODAY. GET AIR CONTROL NO. 188 DIF-

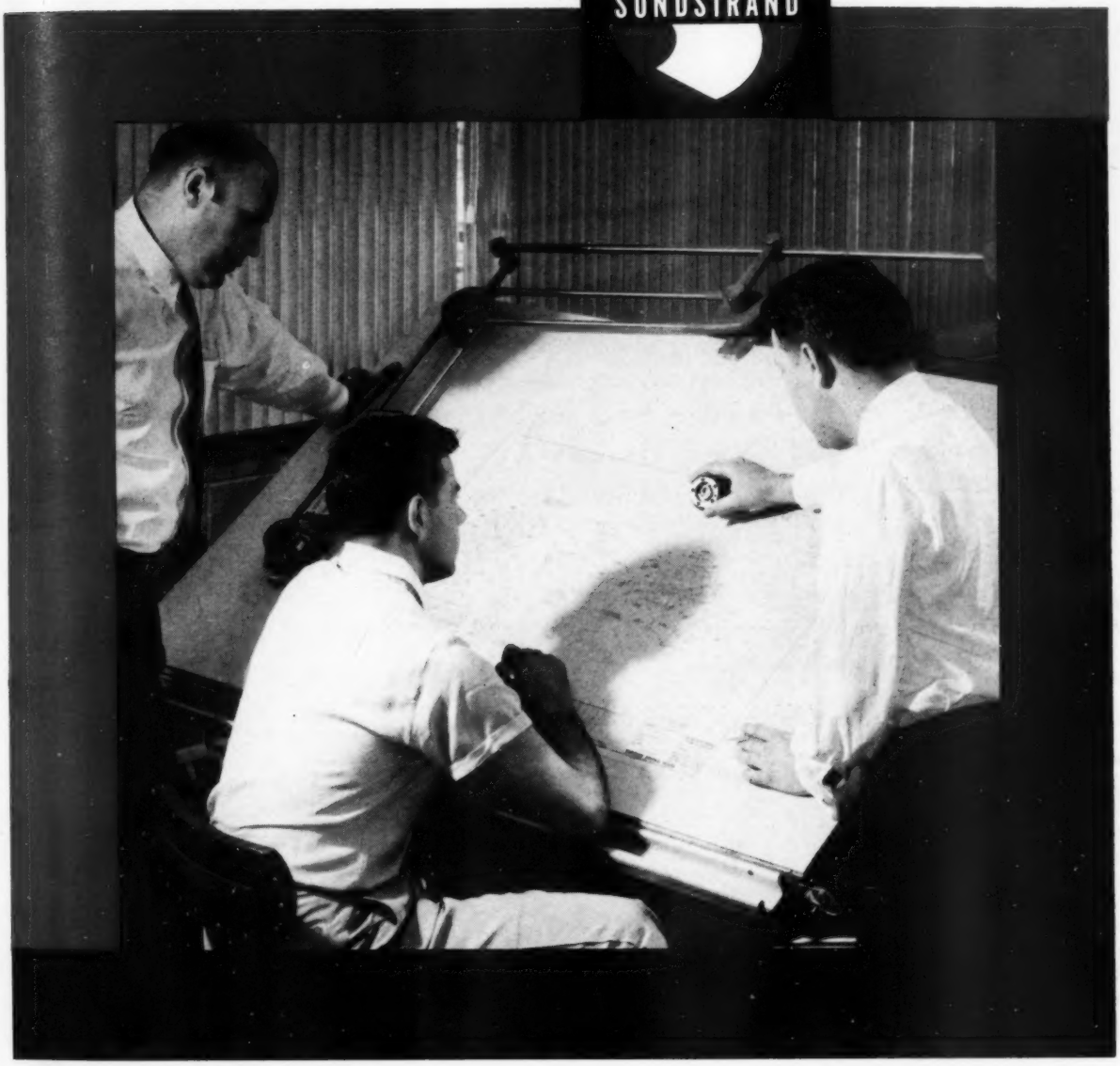
FT. LENGTHS. SEND FOR BULLETIN NO. 146-AC.

Air Control
PRODUCTS, INC.
DEPT. A. COOPERSVILLE, MICHIGAN

SIMPLIFIED INSTALLATION NEW CONSTANT AIR PATTERN

First in fuel units . . .

SUNDSTRAND



How engineering "know-how" keeps Sundstrand Fuel Units out in front!

You can expect constant improvements in Sundstrand Fuel Units, thanks to a staff of experienced hydraulic engineers maintained for that specific purpose. New designs . . . new specifications . . . new materials . . . new methods of manufacture are being developed every working hour . . . to bring you the very best performance possible. From the work of these men have come simplified installation, minimum servicing, easier adjustment, super-quiet operation, economical long life. It pays rich dividends to you and your customers when you specify and insist upon the finest in fuel units—Sundstrand!

SUNDSTRAND HYDRAULIC DIVISION

. . . a division of Sundstrand Machine Tool Co., 2210 Harrison Ave., Rockford, Illinois

Made in Canada by John Inglis, Ltd., 14 Strachan Ave., Toronto

Made in Sweden by Sundstrand Hydraulic Division AB Stockholm

LG72.0051

SILENT AT ANY VOLUME SETTING NEW DUCT CONNECTION AT ANY POINT

AMERICAN ARTISAN

JULY 1955

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Founded 1864

Volume 92 No. 7

WARM AIR HEATING
RESIDENTIAL AIR CONDITIONING
SHEET METAL CONTRACTING

Merged with American Artisan are "Warm Air Heating" and "Furnaces and Sheet Metals"

EDITOR
CLYDE M. BARNES

ASSOCIATE EDITOR
PHILIP D. WARD

ASSISTANT EDITOR
M. C. WRIGHT

EDITORIAL ASSISTANT
H. C. LENNARTSON

ADVERTISING STAFF
WALLACE J. OSBORN
ROBERT J. OSBORN
New York City
MUrray Hill 9-8293

ROBERT A. JACK
DAVID V. MAHAN
Cleveland
SUperior 1-1291

GEORGE C. CUTLER
THOMAS V. JOHNSON
JAMES E. SACRA
Chicago
STate 2-6916

JAMES D. THOMAS
Tucson
6-3698

R. PAYNE WETTSTEIN
Los Angeles—DUnkirk 8-2286
San Francisco—YUkon 6-2522
Portland—ATwater 4107

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FRANK P. KEENEY
President and General Manager—
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Editorial Director—C. M. BURNAM JR.
Production Manager—L. A. DOYLE
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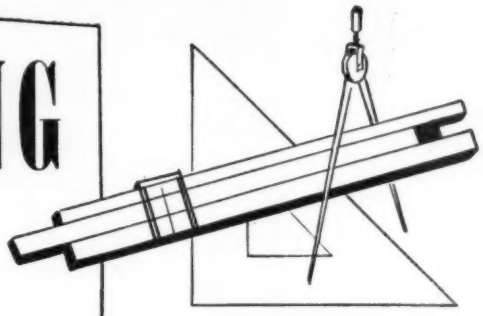
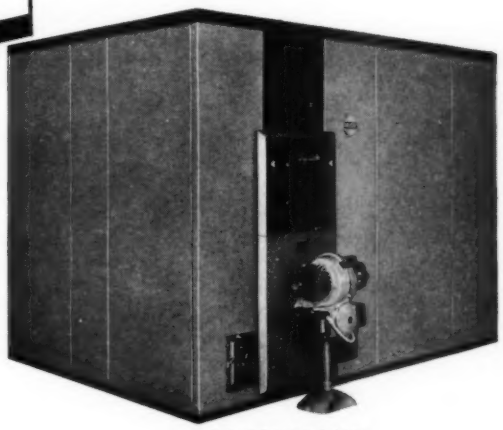
ENGINEERING

makes the Difference!



When prices are closely competitive, the difference between getting a contract and *almost* getting it is a matter of comparative quality. In Syncromatic, you get a complete line designed and built to traditionally high standards of *quality*. So whether it's



O.F.B. 100 OIL FIRED
1,000,000 OUTPUT

HI-CAP (High Capacity) furnaces for commercial heating *or*– the superbly engineered *Syncromatic* line of home heating units–

GF Gas Lo-Boy
75 — 145,000 B.T.U.
Input

"500" Series
Gas or Oil
Counterflow

GFU Gas Hi-Boy
75 — 95,000 B.T.U.
Input

"500" Series
Gas or Oil
Standard Lo-Boy

"700" Deluxe
Oil fired
90 — 146,000 B.T.U.

You've got the jump on competition with Syncromatic. Here are Hi-Boys, Lo-Boys, and Counterflows for Gas or Oil — capable of meeting the precise requirements for every type of home or industrial installation. Available for burning oil, gas, coal — easily converted. Gas models AGA approved. Nationally advertised. Get the facts and you'll go Syncromatic!

Typical industrial furnace for schools, churches, public and commercial buildings. Oil, gas, stoker or hand-fired. From 330,000 to 1,000,000 BTU. Don't miss this big market.

Write Now for the big story on home and commercial heating with Syncromatic top-flight quality.

Syncromatic Corporation

WATERTOWN, WISCONSIN

Syncromatic Corporation, Watertown, Wis

SEND ME COMPLETE INFORMATION —
on the Syncromatic Line of Furnaces for
Industrial and Home Heating

Name .....

Company .....

Address .....

City ..... Zone ..... State .....

the editor's notebook

Thumbing Through This Month's Artisan

. . . we visit the Ford Motor Co. where *Porcelain Enamel Panels Answer Call for Color.* Author G. E. Spencer conducts us through the fabrication and erection operation for a new 12 story building decorated by 6500 porcelain enameled curtain wall panels. We follow the complete process from trimming and shaping the 16 gage sheet through application and deep setting of the enamel, assembly of the panels, shipping and finally the streamlined methods of installation to produce a durable and colorful example of modern architecture.

Crops . . .

AND WE are shown why *Portable Furnaces Find Use on the Farm* in treating hay and other crops as soon as they are harvested, thereby eliminating some of the problems involved in curing the crops on the ground. We see the effectiveness of portable furnaces and blowers in distributing tempered air through the harvested crop to provide proper moisture content and maximum food value, and to prevent spoilage and shrinkage.

Return . . .

AND WE learn some new techniques for sizing, locating and rating *Return Air Systems in Year 'Round Installations* by C. L. Grandstaff which were approved last month by the Manual 9 committee of the National Warm Air Heating and Air Conditioning Association and will subsequently be used in association sponsored college short courses in designing return air systems. The supply system, based on cfm methods for selecting equipment, and published in Artisan last month, was also approved by the committee.

INCREASE EQUIPMENT SALES
...cut down delivery costs
Sentry ODF* Tank Gauge tells drivers what they want to know
at point of delivery!
"THAT LITTLE SENTRY GAUGE SURE SAVES US BOTH A LOT OF TROUBLE!"
TELLS WHEN OIL IS NEEDED
*Oil Dealer's Friend
. . . HOW MUCH IS NEEDED
. . . WHEN TO STOP FILLING
STOP FILLING
Sentry "ODF" remote reading gauge
ONLY Sentry OFFERS SUCH A COMPLETE LINE OF DIRECT AND REMOTE READING TANK GAUGES
Above is SENTRY'S newest — The ODF At-A-Glance tank gauge that's setting new records in building sales and customer goodwill. Located outside of building at fill pipe, this easy-to-read weather-proof gauge shows the exact oil level in the indoor tank. Saves costly time consuming trips to basement, unnecessary hose unreeling and eliminates over-flow. Permits delivery without disturbing customer.
Other constant-register SENTRY gauges include combination tank and remote reading, barrel gauges, direct reading, and gauges for stove and space heater tank. Write today for full information about these fast moving business getters. Advertising aids available.
Combination At-A-Glance tank and remote reading gauges
Sentry stove and space heater gauges
Sentry At-A-Glance barrel gauges
On guard— 24 hours a day
Sentry At-A-Glance tank gauge
Sentry superior quality Therma-Gauge
KRUEGER Sentry GAUGES
GREEN BAY · WISCONSIN

the editor's notebook

(continued)

Advertising . . .

AND WE follow through *Seven Steps to New Business with Phone Book Ads* with Ernest W. Fair, who breaks down the phases of this important advertising medium into basic components in showing the sheet metal contractor how to attract business he might not otherwise be able to contact. Based on the need for making the ad stand out above all the rest, the article presents actual advertisements which show how the yellow pages have been used successfully for pulling new business.

Houston Holds Title of "Most Air Conditioned"

THERE IS 0.271 ton of air conditioning capacity installed in Houston for each person in that city, reports the Chamber of Commerce. Another Texas city, Dallas, ranks second with 0.221 tons per person. The Washington, D. C. figure is 0.113 and Philadelphia's is 0.112, according to the same source. Both Philadelphia and Washington report more tonnage for commercial air conditioning than does Houston, however.

Other air conditioning tonnage figures per capita are:

Atlanta	0.042
Detroit	0.090
New York City	0.018

Houston's total air condi-

NEW from Luxaire®
Counterflow Year 'Round Air Conditioning

It's complete, in one system . . . with Gas or Oil Heating

. . . with *either* the new, Air Condensing or Water-Condensing Cooling.

Another Luxaire "step-ahead" advancement . . . a **completely packaged** Counterflow Year 'Round Air Conditioning System . . . the **practical approach** to combination heating and cooling of basementless homes.

Both the cooled and heated air are supplied from the same compact unit. And the Cooling Coil is mounted **vertically** within the furnace cabinet . . . to eliminate all possibility of excessive condensation in the air discharge ducts, which may be buried in or located under the floor.

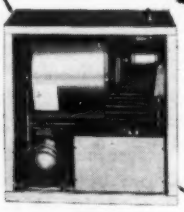
The Luxaire Counterflow Year 'Round Air Conditioner is available, now, in the 2 ton size with 100,000 B.T.U. Input Gas or Oil heating . . . and either Air or Water Condensing Cooling.

Either Air Cooled or Water Cooled . . . all Luxaire Cooling Systems are charged with Freon and **Hermetically Sealed** at the Factory. **You do not need to be a refrigeration specialist** to install Luxaire!

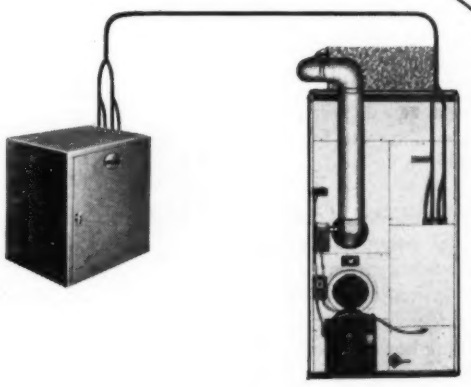
Luxaire Counterflow Year 'Round units are **priced right** . . . for 1955 competitive conditions. Your Luxaire Jobber has the profit-telling details.

Unit equipped with Gas Burner and Water Cooled Refrigerant Circuit. With Water Cooling, the entire Refrigerant Circuit is installed within the Furnace Cabinet.

Unit equipped for Oil Heating with Cooling Coil of Air Cooled Refrigerant System, installed in Furnace Cabinet. Refrigerant Tubing, permanently brazed to Cooling Coil, is shown coiled for shipment.



At left, Compressor-Condenser Assembly of Air Condensing System. The Refrigerant Tubing is extended from the Cooling Coil and connected to this unit, which is installed in a remote location.



Above, the Air Condensing Unit for installation in out-of-the-way places is shown attached to Cooling Coil, installed in cabinet of Counterflow Year 'Round Unit. Flexible, Copper Refrigerant Lines, available in 30 or 50 foot lengths, permit separation of up to 50 feet. "Herma-Seal" Connectors maintain factory charge and seal of Cooling Circuit . . . eliminate pumping down and recharging on the job.

Twin Cooling Systems Hermetically Sealed at the Factory

•

Units approved to Burn Gas or Oil

THE Luxaire® C. A. OLSEN MANUFACTURING COMPANY • • ELYRIA, OHIO

HEATING & AIR CONDITIONING UNITS

tioning tonnage is 277,864. Of this figure, 134,658 tons and 4930 installations are central commercial jobs using electricity, 4502 jobs representing 22,654 tons are central residential systems using electricity, and 107,509 tons are represented by window units. In addition, just over 13,000 tons are accounted for by gas-using installations.

Less Rental Housing, More Home Ownership

I WAS interested in a report received recently from the Federal Housing Administration stating that 1954 saw a continuation of a three year trend of lessening volume of new rental housing. FHA pointed out that home ownership increased during the same period. Among the factors contributing to its growth, said FHA, were the increasing size of the average family and rising family incomes. The financing terms of the 1954 housing law were also unquestionably a factor in making home ownership possible for more American families. Typical mortgage of $8,041 per unit in 1954 was higher than ever before, according to FHA, but the ratio of loan to replacement cost decreased from 82.4 percent in 1953 to 74.7 percent in 1954.

Reader Is "Lost" Without Directory Issue

WE WERE pleased to learn that the Wisconsin Furnace Co., Madison distributor of warm air heating equipment, felt "lost" when its January Directory Issue somehow disappeared from the shelf. A number of readers have told us that they keep the directory issue in a convenient

DID YOU KNOW . . .

. . . STANDARD Had The FIRST
"EASY-GRAB" ELBOW CARTONS!
(And they're still the best!)

. . . STANDARD Had The FIRST
RIP-CORD PIPE CARTONS!
(And they're still the best!)

. . . STANDARD Had The FIRST
COMPLETE ASSORTMENT OF SMALL PIPE & FITTINGS! (4" and 5")
(And they're still the best!)

STANDARD-ized Pipe and Fittings are FIRST IN QUALITY AND SERVICE!
(And they're still the best!)

Consult Your Wholesaler!

STANDARD FURNACE SUPPLY CO., LTD.
714 South 72nd St. P. O. Box 1312 Phone REgent 1744
OMAHA, NEBRASKA
ADI STANDARDIZED FITTINGS
Also Authorized Distributors of
HART & COOLEY REGISTERS
AMERICAN AIR FILTERS METALBESTOS
L·O·F GLASS FIBERS INSULATION

spot for reference and use it repeatedly throughout the year. That is, of course, its function — and we were happy to be able to replace the Wisconsin company's missing copy.

"Good Work Is Not Cheap"

THE SLOGAN used by A. Nabakowski Co., sheet metal contractor of Amherst, Ohio, seems to us a good one: "Cheap Work Is Not Good — Good Work Is Not Cheap." A lot of dealers have learned the truth of this statement, and we are glad to note that the idea of selling "quality" is rapidly gaining acceptance in all branches of our field.

Film Shows Benefits Of Air Conditioning

MATT LAWLER, vice president of Worthington Corp.'s air conditioning and refrigeration division, writes me about the premier showing of a new 13-minute color movie, *The Case of the Hot Weather Blues,* sponsored by his company. Designed as a non-commercial venture, the film shows homeowners and potential home builders the benefits derived from air conditioning — both in cooling and in year 'round conditioning. Besides the comfort and health advantages, potential savings are pointed out as housework and cleaning bills are reduced. It also shows different types and styles of units that can be installed, depending upon the job to be done and the conditions of service. Prints of the film are available on loan to public groups by Worthington Corp., Visual Aids Unit, Advertising and

MORE and MORE SHOPS are USING

2

LOCKFORMERS *profitably...*

HERE'S WHY: Lockformer "A", in this instance and in addition to built-in Pittsburgh Rolls, has Drive Cleat Rolls mounted on auxiliary shafts, the Slitting Attachment mounted above the main work table. Lockformer "B" has Double Seam Rolls mounted on the auxiliary shafts, and a Flanging Attachment mounted above the main work table.

Even in a fairly large shop, this set-up eliminates "waiting", for two men can roll Pittsburghs at the same time. No time is lost in "change-over" between the two sets of auxiliary rolls indicated or the two attachments mentioned. You're *always* set up to do five different forming or cutting operations, and you have an "extra" Lockformer available for peak production periods.

You *know* your present Lockformer is a profitable investment; another Lockformer will cut your fabrication costs still further!

ONE MAN WITH A LOCKFORMER
MAKES MORE PITTSBURGH LOCKS
THAN SIXTEEN MEN WITH EIGHT BRAKES

Write for your free copy of the new Lockformer Catalog (AND PRICE LIST)

THE LOCKFORMER CO.

4615 WEST ROOSEVELT ROAD • CHICAGO 50, ILLINOIS

the editor's notebook

(continued)

Sales Promotion Dept. Harrison, N. J.

Says Artisan "One of the Best"

H. W. GRIEBEL, sheet metal contractor of California, Mo., writes to tell us that after 50 years in the business he has sold his tools and stock to H. W. Schmidt, owner of Twin City Heating & Air Conditioning. "American Artisan is one of the best magazines of its kind," he says, "and I have learned a lot from reading it. Please send any copies that are still due on my subscription to the new firm."

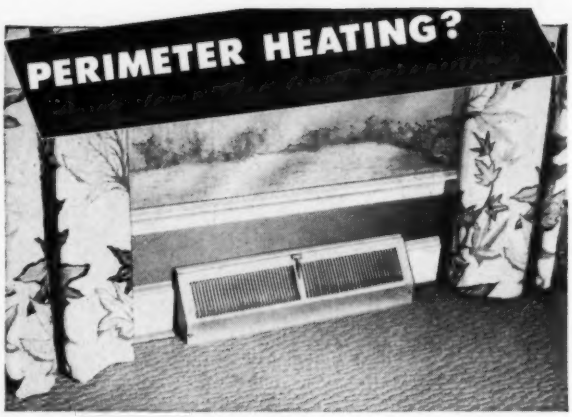
Shipments of Fans, Blowers on Increase

ACCORDING to a recent report we received from the Bureau of the Census, shipments of fans, blowers and unit heaters during 1954 totaled $257 million, an increase of 3 percent over 1953. Of the 1954 total, the fan and blower group of products accounted for $198 million, or 77 percent; the unit heater group for $58 million, or 22 percent; and air washers for the remainder, $1.4 million.

Room Air Conditioner Sales Show Increase

THE AIR-CONDITIONING and Refrigeration Institute writes that reports received indicate retail sales of room air conditioners are up for the first quarter of 1955 nearly 30 percent over the same period last year. The reports also show that inventories at the wholesale and factory levels are down nearly 12 percent.

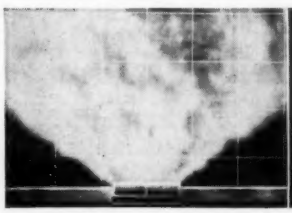
This indicates a rapid liquidation of last year's carryover



Auer "Perfusaire"
TRADE-MARK

● The new *low-cost* baseboard decorator style perimeter diffuser illustrated above is only 18" long, but with a capacity of 4 to 8 foot units. Designed for easy installation in or against plastered walls, inside or outside the baseboard and in new or old construction. It has a pre-cut hole for 2¼ x 12" duct openings and knock-outs to accommodate 2¼ x 14" where needed. It is the answer to uneven wall installations—so difficult with long diffusers.

"Perfusaire" distributes air evenly over a wide fan-shaped area, and is equipped with a built-in damper for system balancing. It is an ideal unit for combination heating and cooling systems.

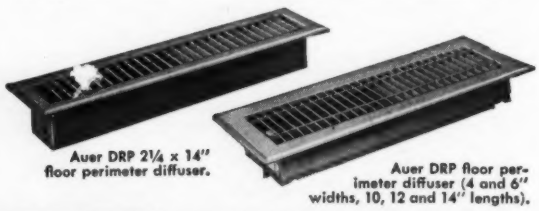


Auer "Perfusaire" test photo showing huge fan-shaped air pattern, ideal for heating and combination heating and cooling systems.

Clip fasteners permit a means of attaching 2¼ x 12" or 2¼ x 14" duct without cutting the diffuser.

FLOOR TYPE

For floor type perimeter and intricate "narrow-space" installations, Auer can fill your needs from its complete "DRP" line of registers in standard sizes.



Auer DRP 2¼ x 14" floor perimeter diffuser.

Auer DRP floor perimeter diffuser (4 and 6" widths, 10, 12 and 14" lengths).

Write for full details on low cost "Perfusaire" and other perimeter diffusers. Ask for Bulletin P-54.

Auer REGISTERS and GRILLES

THE AUER REGISTER CO.

6602 Clement Ave. • Cleveland 5, Ohio

the editor's notebook

(continued)

and presages another big year in the room air conditioner industry, particularly if the weather is favorable.

Has Been Reading Artisan for 45 Years

FROM VICTORIA, Australia James Marshall writes to thank us for sending him a reprint of one of Hugh Reid's pattern problems. Mr. Marshall says he has been a subscriber for more than 45 years and during that time has found its contents very interesting and helpful. "I have been a sheet metal worker for many years," he says, "and although now retired from business, still take an interest in my late calling."

Initiates Executive Development Program

C. E. BUCHOLZER, president of the Airtemp division of Chrysler Corp., writes me about his company's executive development and management development programs. He says the new management development department will have the responsibility to plan, initiate, direct and administer active programs designed to provide adequate reserves of trained personnel capable of assuming greater responsibility within the division.

"Opportunities for advancement have become more numerous as the result of the company's large-scale expansion," he points out, "and such opportunities are expected to multiply as our long-range plans materialize. To maintain thorough division and corporate strength while in the process of expanding, it is imperative that qualified people in substantial

Now! Thatcher offers more year-round sales with a new complete line

Another good reason why you'll do better with Thatcher!

Make sales faster, easier with the backing of a *complete line* company! *Every* type of unit — for *all* fuels — for *every* system. Puts you in a position to sell *both* the new construction and modernization markets. And most important: Thatcher's *complete* winter heating and summer cooling lines assure you year 'round business . . . year 'round profits! It's one of the many features that continue to give Thatcher wholesalers and dealers that extra edge on competition.

Why not make your sales job easier . . . more profitable . . . with Thatcher. Get the full story today! Write Thatcher Furnace Company, Garwood, N. J.

Thatcher
FURNACE COMPANY
Specialists in Heating Since 1850

The Oldest Name in Indoor Comfort

the editor's notebook

(continued)

numbers be trained and readied to move upward to higher levels of responsibility."

New Heating Unit Introduced in Buffalo

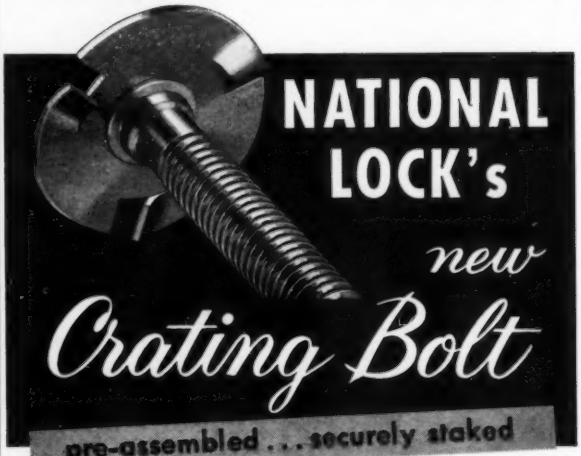
RECENTLY we received from Gregory D. Anderson of the Bryant-Daybar Co., Inc., Buffalo distributor of heating equipment, a specification sheet on the 1955 "Anderson SM" unit. We were somewhat surprised to learn that the new unit has a "shell pink" finish, boasts a centrally located fuel tank "that works in conjunction with a high frequency alarm system which operates when the tank is empty," and has an operating cost that "varies daily." It wasn't until we found out that "SM" stands for Susan Mary that we wised up and sent the proud father a congratulatory letter.

We'd like to congratulate him, too, on his use of the announcement as a merchandising tool. We're sure that his customers and other business associates, like ourselves, won't soon forget Gregory Anderson as a supplier of heating equipment!

How Salary Affects Job Efficiency

I WAS INTERESTED in the report recently sent me by Industrial Psychology, Inc. pointing out that a potential source of personnel costs and also personnel dissatisfaction lies in the relation between the employee's job efficiency and his salary. A sound program of wage and salary administration involves four systematic steps, according to the report — 1) job description and evaluation; 2) correct employee placement on a specific job; 3) periodic reviews of his job efficiency; and 4) a numerical system of relating job efficiency to salary paid. This last involves the use of a "merit rating" table designed to point up job inequities and show which employees (if any) are either over or underpaid. Further information on scientific salary administration and merit rating may be obtained from Industrial Psychology, Inc., Research Center, 4747 Fort Lowell Rd., Tucson 6, Ariz.

dependable...low cost SHIPPING INSURANCE



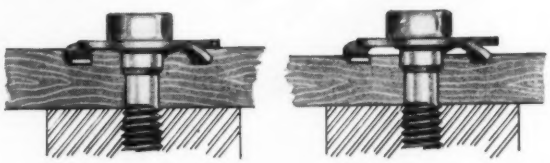
● You reduce shipping damage . . . minimize enamel chippage . . . when your appliances are firmly secured to crates with the new National Lock crating bolt. Bolt is sturdily staked to specially-formed hardened spring steel washer. Washer lugs bite into the wood, preventing bolt from turning. Also available as a nut and washer staked assembly . . . with lugs to prevent loosening. (Leading manufacturers have proven that loosening torque is greater than tightening torque.) Put National Lock crating bolts to the test in *your* shipping room NOW.

METAL THREAD-CUTTING FEATURE SAVES CRATING TIME, CUTS COSTS

Bolt is self-threading. Can be quickly and easily turned into metal foot or base of appliance. Nut is not required.

lugs will not let go...

BEFORE SHRINKAGE **AFTER SHRINKAGE**



Our sales engineers will submit samples and work with you in solving your crating problems. Remember National Lock Company for all your special fastener requirements.

Write for full information and prices

NATIONAL LOCK COMPANY
Rockford • Illinois

the editor's notebook

(continued)

Automatic Heating — Factor in Progress

HAROLD BRAYMAN, director of the public relations department for E. I. du Pont de Nemours & Co., sent me a copy of his speech *Industrial Developmental and Human Progress Go Together*, given at the recent West Virginia Industrial Development Conference. Commenting on today's improved living conditions, Mr. Brayman cited the development of the automatic heating system as being one of the advances which has contributed much to the greater comfort of the average American homeowner. Another interesting comment he made was that "even as compared to 25 years ago, the average American works 15 percent fewer hours and has 50 percent more purchasing power. It is estimated that, if productivity continues to increase at the present rate, the cash income of the average American family by 1980 will be $6600 a year, after taxes, in terms of present dollars."

Clyde M. Barnes

EDITOR

THE SOLENOID VALVE

made for all gases

• MGSCo Solenoid Valves, Series EA, are made for all gases—even sour gas. All internal parts in contact with the gas are made of stainless steel or aluminum to prevent damaging corrosion. Valve bodies are made of cast, heat-treated aluminum alloy.

Straight through models are available in ½" female pipe thread inlet and outlet. A ¾" size is now being readied for production. If you want pilot tappings, they can be provided on either or both sides of the body. A pressure tapping can also be placed below the valve, or in the same place can be inserted a manual control screw to hold the valve open during periods of power failure.

For easy wiring, solenoid hoods can be turned 360°. Solenoid hood assemblies are replaceable. Conduit attaching nuts turn easily to facilitate attachment of the tubing.

The valve can be supplied in 20-volt models using transformer DA1 (two-terminal) or DA2 (three-terminal). Get the complete story by writing:

THE MILWAUKEE GAS SPECIALTY CO.
Dept. AA-1
MILWAUKEE 1, WISCONSIN

AMERICAN-Standard
YEAR 'ROUND AIR

Gas-Fired Heating-Cooling Unit

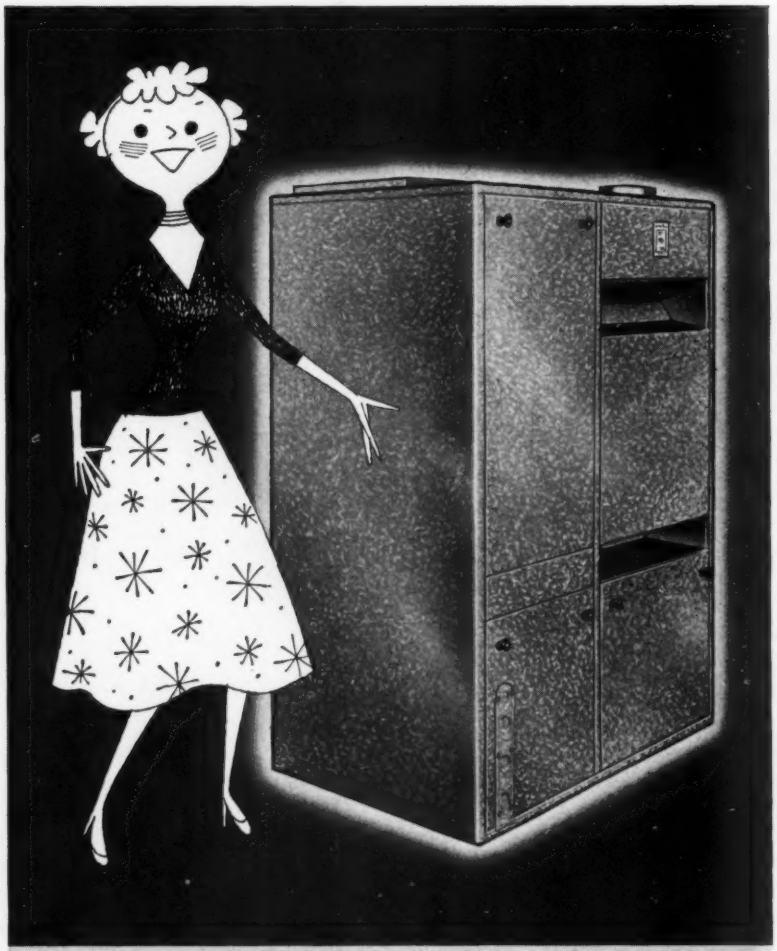
Heating*	Cooling	
75,000 Btu	2 hp	—
100,000 Btu	2 hp	3 hp
125,000 Btu	2 hp	3 hp
150,000 Btu	2 hp	3 hp

*Btu Input

Here—at competitive price—is a famous-brand, top quality year 'round unit that offers a variety of heating capacities with choice of 2 hp *or* 3 hp cooling.

Compact in size, ruggedly built, this model performs efficiently in any style of home . . . can be installed in utility room, closet or basement with only a minimum of floor space required. The complete comfort it provides is a strong selling point for the builder, and a strong incentive to present home owners to replace their old furnaces *now* with year 'round air conditioning.

Available with summer-winter thermostat and manual or automatic summer-winter changeover damper. Unit may be obtained less cooling circuit if desired. The cooling circuit is covered by American-Standard Five Year Protection Plan.

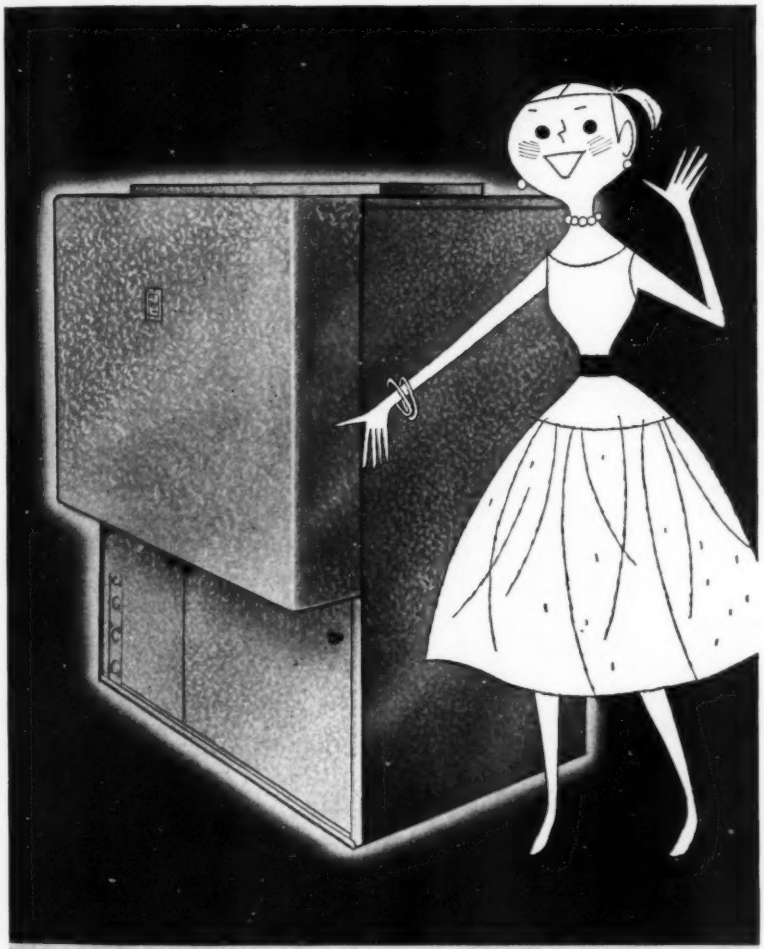


FACTORY ASSEMBLED—READY FOR INSTALLATION
Refrigerant circuit is packed separately for convenient handling.

DEALERS!

See your American-Standard Distributor.
He's listed in the Yellow Pages of
Your Classified Telephone Directory
under "Air Conditioning Equipment" or "Furnaces"

ANNOUNCES 2 NEW CONDITIONING PACKAGES



FACTORY ASSEMBLED—READY FOR INSTALLATION
Refrigerant circuit is packed separately for ease of handling.

Oil-Fired Heating-Cooling Unit

Heating*	Cooling	
85,000 Btu	2 hp	3 hp
112,000 Btu	2 hp	3 hp

*Btu at Bonnet

American-Standard's new oil-fired combination summer and winter air conditioner offers flexibility as to relative heating and cooling capacities. It enables the new home builder or the present home owner to achieve the utmost in year 'round comfort at lowest cost consistent with top-brand quality.

Handsomely styled, compact in design, this unit can be installed in any type of home wherever a few square feet of floor space is available—utility room, closet or basement.

Not only does this model excel in performance—it's competitively priced to sell fast. Features include manual or automatic summer-winter changeover damper, and summer-winter thermostat. The cooling circuit is covered by American-Standard Five Year Protection Plan. Unit is available with or without cooling circuit.

AMERICAN-Standard
AIR CONDITIONING DIVISION
ELYRIA, OHIO
American Radiator & Standard Sanitary Corporation

HERE'S YOUR GREAT NEW, ALL-NEW THAT'LL SMASH ALL

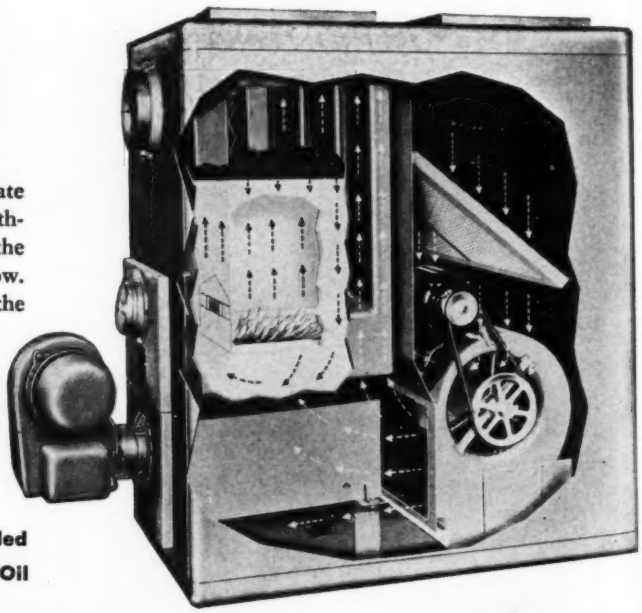
That's right—an all-new line of furnaces that is making the Combustioneer franchise the most valuable ever offered. Here, at last, is a truly complete line of furnaces with an entirely new method of getting every last unit of heat from each particle of fuel—whether gas, oil or coal. The Combustioneer furnace line is NEW—not a warmed-over version of all the other lines. It has features you can easily demonstrate—features your customers will see, understand and believe!

No big outlay for stock, either, because with Combustioneer each domestic furnace may be converted to oil or gas in a matter of minutes with interchangeable kits. Installation is faster than ever—and service, if it's ever needed, is quick and time-saving.

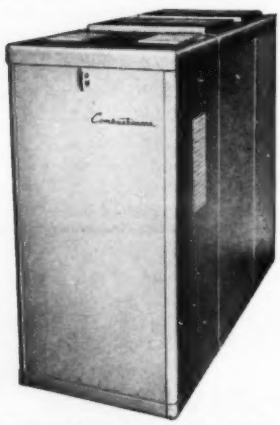
THE *Combustioneer* COUNTERFLOW PRINCIPLE

Look how easy and convincing it will be to demonstrate this radical departure from old-fashioned heating methods. Note that gases of combustion and air from the blower travel in opposite directions—or counterflow. Observe that no internal baffling is needed to obtain the very highest transfer efficiencies.

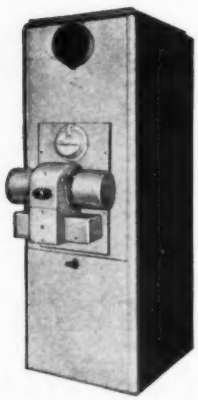
- **Complete Line—Oil, Gas—Stoker and Hand-Fired Coal**
- **64,000 to 1,250,000 BTU's**
- **Easier to Sell . . . Install . . . and Service**
- **Low Inventory**
- **Lo-Boy • Hi-Boy • Reverse Flow • Suspended**
- **Domestic Models Easily Converted to Gas or Oil**



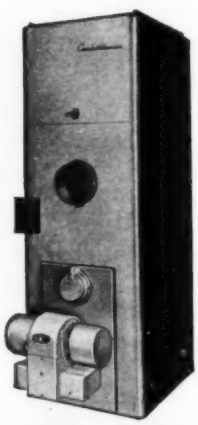
Here are 3 of the fastest selling domestic furnaces in the line!



COMBUSTIONEER LO-BOY (Oil or Gas Fired) 24" wide, 60" deep, 49½" high. BTU output: Gas 64,000 to 160,000; Oil 85,000 to 250,000.



COMBUSTIONEER HI-BOY (Oil or Gas Fired) 24" wide, 26" deep, 67" high. BTU output: Gas 64,000 to 80,000; Oil 85,000 to 110,000.



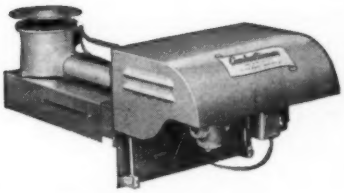
COMBUSTIONEER REVERSE FLOW (Oil or Gas Fired) 24" wide, 26" deep, 67" high. (Gas) AGA approved for close installation. BTU output 64,000 to 80,000. (Oil) UL approved for close installation. BTU output 85,000 to 110,000.

Combustioneer FURNACE LINE PREVIOUS SALES RECORDS!

No other line of furnaces can boast ALL of these great features:

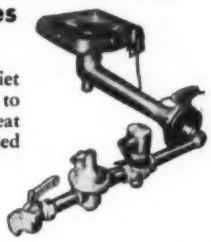
1. Designed for both high & low pressure firing
2. Extra heavy 10 and 12 gauge steel heat exchangers
3. Corrugated heat exchangers, large surface in small compact area
4. Sealed base channel mounted
5. Easily removed refractory combustion chamber
6. Easy to change from one fuel to another
7. Large heavy duty blower assembly mounted in rubber
8. Double-ended fan shaft with self aligning bearings
9. Pressure tested heat exchangers
10. Extra radiating surfaces
11. Baked hammerloid enamel finish
12. Shipped assembled or knocked down
13. Thoroughly provided with knock-outs
14. Front or rear stack outlet
15. Interchangeable doors
16. Heavy 20 gauge steel casing of sturdy construction
17. Painted inside and out
18. Full size filters
19. Large access doors

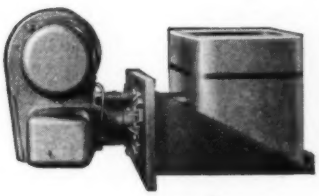
Competition can't touch the extra features of Combustioneer's oil and gas furnaces and conversion burners now backed by a 10-year warranty



Alternate Kits for Combustioneer Domestic Furnaces

GAS—The ultimate in efficient, quiet gas burners designed and developed to give greater heat diffusion on the heat exchanger walls. Burner is AGA Listed for all gases.





OIL—Shown is the Combustioneer High Pressure Burner with removable combustion chamber. Burner incorporates patented Triple Velocity Visorhead for more complete combustion.

TEAM UP WITH THE WINNER!
Mail this coupon for the whole Combustioneer Story and do it . . . TODAY!

Combustioneer

COMBUSTIONEER DIVISION
The Steel Products Engineering Company
1257 West Columbia Street, Springfield, Ohio

LOW AND HIGH PRESSURE OIL BURNERS • GAS BURNERS
OIL, GAS, COAL FURNACES • STOKERS • HUMIDIFIERS

COMBUSTIONEER DIVISION
The Steel Products Engineering Company
1257 West Columbia Street, Springfield, Ohio

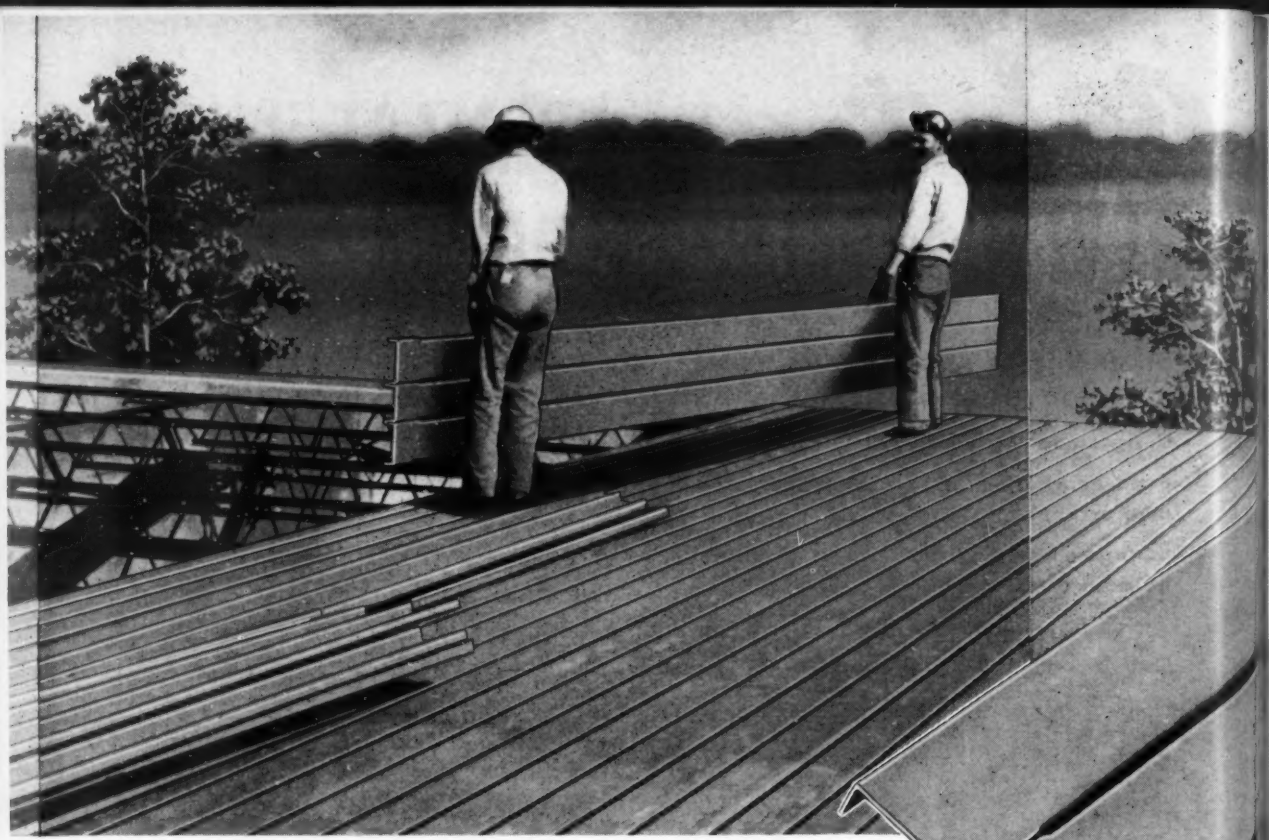
SEND ME THE WHOLE STORY ON THE COMPLETE LINE OF COMBUSTIONEER HEATING EQUIPMENT.

NAME _____

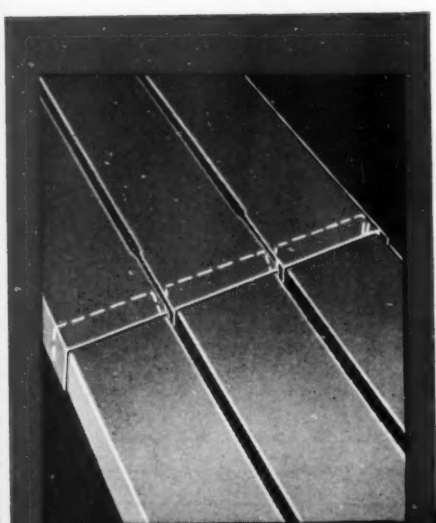
COMPANY _____

ADDRESS _____

CITY _____ ZONE ___ STATE _____



Prospects for MILCOR* Steel Roof Deck are all around you—



Unique design permits sections to be nested and lapped quickly and easily. Plates interlock firmly, to provide an ideal base for permanent roofs.

MILCOR Steel Roof Deck gives you opportunities for a big profitable part of the roofing job. You can get these jobs without much extra effort — because with Milcor Steel Roof Deck, you can offer your customer these important advantages:

Speedy Installation—By using Milcor Steel Roof Deck, you can get his building under cover *fast*. That's because you can erect it anytime — in any weather. Besides, roofing can be applied immediately — no "drying-out" period is needed.

Economy — Fast installation cuts job costs. And Milcor Steel Roof Deck is light in weight — the finished roof requires less costly supporting structures.

Permanence — Milcor Steel Ro Deck lasts the life of your custome building.

Fire-Resistance — Your customer g all the advantages of non-combusti construction.

Adaptability — Milcor Steel Ro Deck can be used for flat, pitched, arched roofs.

Attractive Appearance — Smoo surface provides attractive, unbrok ceiling design.

Our engineers will prepare comple erection drawings for your jobs no extra cost. Catalog No. 240, av able upon request, gives you the co plete information you want on lo installation, and insulation.

*Reg. U. S. Pat.

INLAND STEEL PRODUCTS COMPAN

4023 WEST BURNHAM STREET • MILWAUKEE 1, WISCONSIN

BALTIMORE 5, MD., 5300 Pulaski Highway • BUFFALO 1, N. Y., 64 Rapin St. • CHICAGO 9, ILL., 4301 S. Western B
CINCINNATI 25, OHIO, 3240 Spring Grove Ave. • CLEVELAND 14, OHIO, 1541 E. 38th St. • DETROIT 2, MICH.,
Amsterdam Ave. • KANSAS CITY 41, MO., P. O. Box 918.• LOS ANGELES 58, CALIF., 4807 E. 49th St. • 4807 E. 49t
NEW YORK 17, N. Y., 230 Park Ave. • ST. LOUIS 10, MO., 4215 Clayton Ave.

Develop Standards for Advertising Room Coolers

A SUGGESTED 16-point program of standards for advertising and selling room air conditioners has been developed by the Air-Conditioning and Refrigeration Institute and the National Better Business Bureau in cooperation with manufacturers of room air conditioners and local Better Business Bureaus throughout the country. In announcing the availability of the recommended standards, ARI Managing Director George S. Jones, Jr., and NBBB Executive Vice President Allan E. Backman made the following joint statement:

"The intent of these standards is to encourage and preserve dependability in advertising and selling room air conditioners. It is also hoped that these standards will have a stabilizing influence on the advertising and selling practices at the local level, where they may be supplemented to meet local requirements. These standards should help build consumer confidence in the room air conditioner industry, thereby helping to protect the investment of dealers, distributors and manufacturers in the productivity of room air conditioner advertising."

A major objective of the standards, according to ARI, is the elimination of public confusion about the cooling capacity of room air conditioners by providing a single authoritative method of expressing such claims on a basis which can be readily verified.

The recommended standards define a room air conditioner as including "a prime source of refrigeration and dehumidification and means for circulating and clearing air" although it may also include means for ventilating, heating, or performing other functions.

Recognizing the wide variation in construction, insulation, temperature, and other controlling factors, the standards provide that advertising claims as to area cooling capacity shall be appropriately qualified to avoid deception of the public. Other standards require adequate disclosures in the advertising of discontinued models or of units which are

(*Continued on page 22*)

Owners Spending More On Home Improvements

PRELIMINARY findings of the tenth annual survey of consumer finances conducted by the board of governors of the Federal Reserve System in cooperation with the survey research center of the University of Michigan indicate that consumers are more optimistic than a year ago about their income prospects and the general business outlook. Plans to make home improvements this year are reported by somewhat larger proportions of consumers than a year ago and plans to buy new and existing homes are reported more frequently. About one-third of the home owners planning improvement and maintenance expenditures, the survey indicates, expect to spend $500 or more.

Atlanta to Adopt New Heating, Cooling Code

A PROPOSED new code covering heating, ventilation, air conditioning and refrigeration for the city of Atlanta is now about 30 days away from adoption by the Aldermanic Board, according to M. M. Wise, chairman of the heating and ventilation committee. The major change is the addition of rules covering air conditioning. The old code, passed in 1941 and amended many times since, did not regulate air conditioning installation and maintenance. Mr. Wise said copies of the proposed code have been sent to all interested organizations.

F T C Unable to Define Industry Member

ON JUNE 22 the Federal Trade Commission called a meeting in Washington, D.C. to define the meaning of the term *Air Conditioning* and to determine what constituted an *Industry Member*. Representing the warm air heating and air conditioning industry were J. D. Wilder and John P. Demling of the SMCNA; George Boeddener, NWAHACA; and two members of the Sheet Metal Workers Union. The remainder of the 22 people there were from other industries.

Due to the unreasonable demands of representatives from associations that are only remotely connected with the handling of conditioned air and whose members are unfamiliar with the problems involved, the meeting had to adjourn without being able to define the most essential foundation for a set of Trade Practice Rules, to wit: who is qualified to be an industry member?

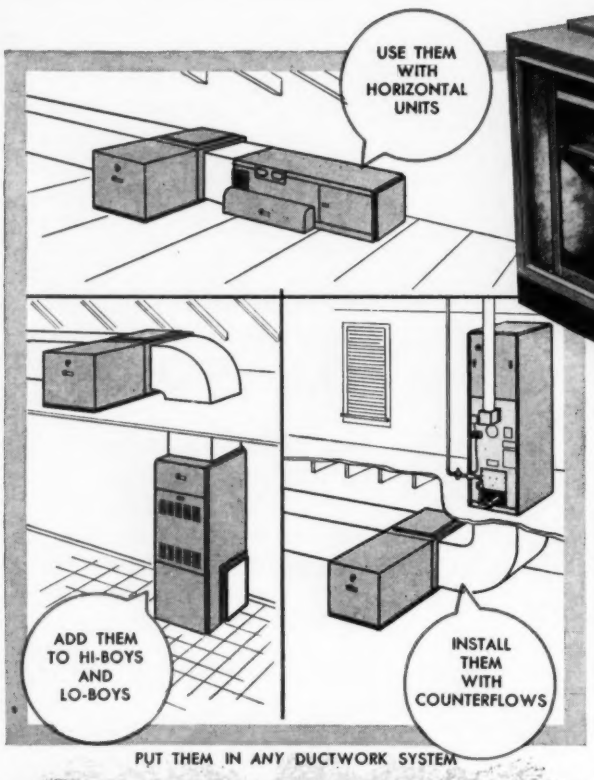
New NAHB Quarters To Feature Displays

THE NATIONAL Association of Home Builders recently moved into its new headquarters in the National Housing Center, Washington, D. C., where it will exhibit displays of equipment and building materials to both public and industry visitors. Also featured is a public information center which will provide manufacturers' pamphlets and product literature on request. Manufacturers of heating and air conditioning equipment represented in the exhibit halls, which will be formally opened the middle of next month, include the Air Conditioning division of American Radiator & Standard Sanitary Corp.; the Airtemp division of Chrysler Corp.; Condensation Engineering Corp.; Crane Co.; General Electric Co.; Iron Fireman Mfg. Co.; Minneapolis-Honeywell Regulator Co.; Perfection Industries, Inc.; the Truscon Steel division of Republic Steel Corp.; Union Asbestos & Rubber Co.; and Westinghouse Electric Co.

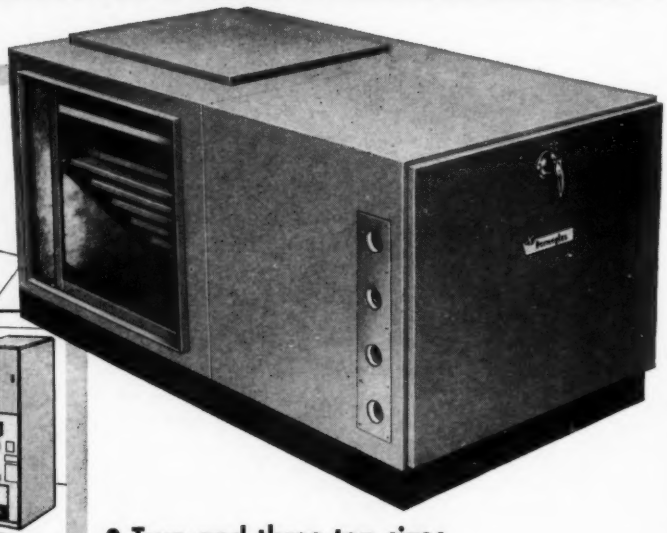
Permaglas®

presents its new

HORIZONTAL
SUMMER AIR CONDITIONERS



PUT THEM IN ANY DUCTWORK SYSTEM



- **Two and three ton sizes**
- **For any new or existing system**

You can easily and quickly add these new Permaglas Horizontal Water-Cooled Cooling Units to any new or existing ductwork system. Use them with up or down air flow, or with horizontal air flow in either direction. They come to you fully assembled, wired, charged, and tested, with all necessary controls, so installation is simple. They utilize the existing blower, to keep size and costs down! The quiet hermetic compressor is warranted for your protection, and mounted to keep noise and vibration out of the system. Here's a completely hermetic horizontal unit you can really sell!

Mail the coupon today for more details, and information about a profitable Permaglas Heating and Cooling Franchise.

Permaglas is going places... are you aboard?

Permaglas®
HEATING AND AIR CONDITIONING

Sales Department, Permaglas Division,
A. O. SMITH CORPORATION, Kankakee, Illinois AA-7-55

Please rush me details about available franchises on Permaglas Heating and Cooling.

Name.....Title.....

Company.....

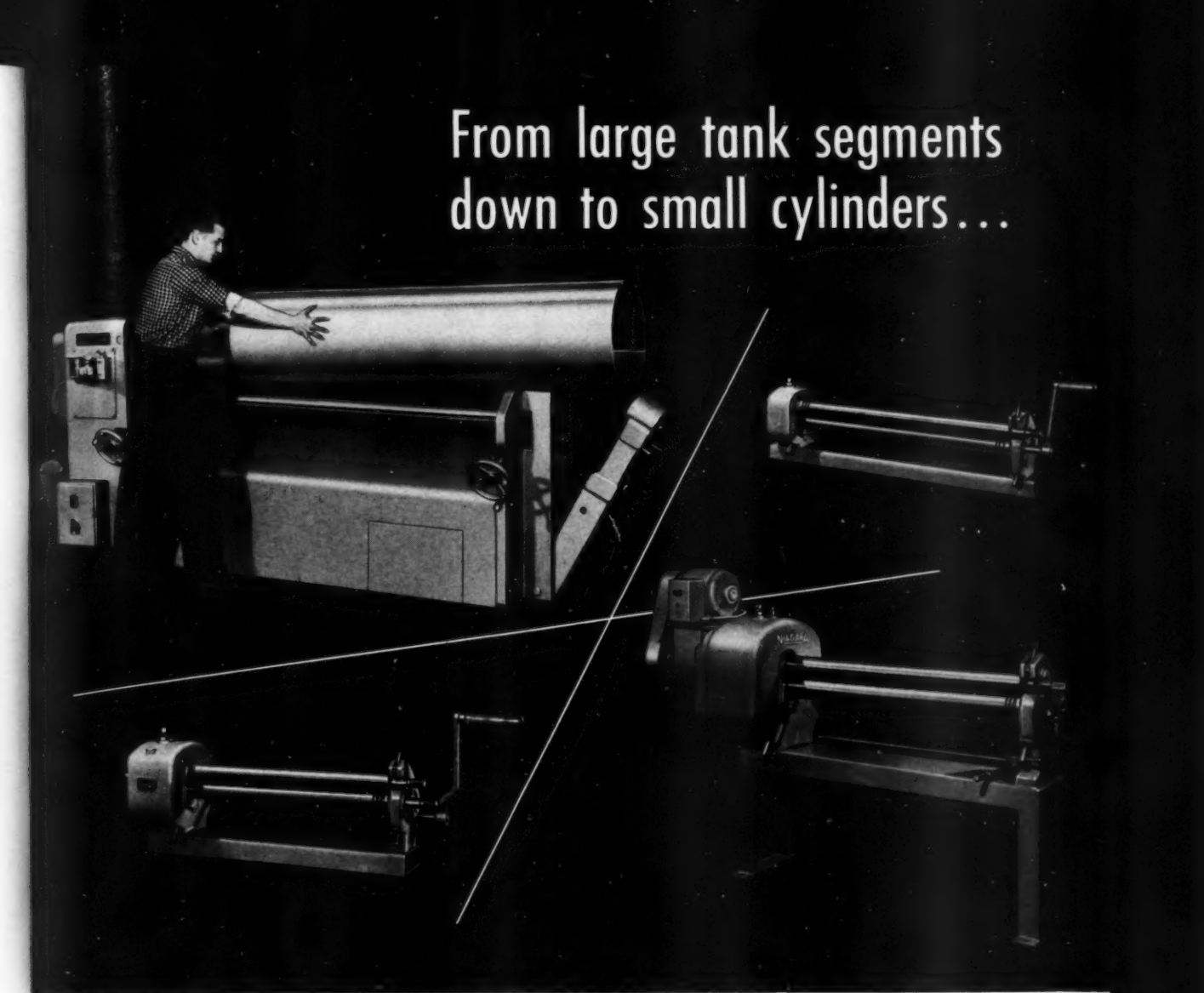
Address.....

City.....Zone...State.....

Through research A.O. Smith *...a better way*

A.O.Smith
CORPORATION

PERMAGLAS DIVISION • KANKAKEE, ILLINOIS



Niagara Slip Roll Formers can turn out better work faster, at greater profit

Name the job! In the truly complete Niagara line . . . *most complete of them all* . . . you're sure to find the Slip Roll Former best suited to your sheet rolling needs. Working with lengths up to 120" and thicknesses up to 5/16" mild steel, Niagara Slip Roll Forming Machines are available in an unusually wide range of power and hand operated models for forming light and heavy pipe; stacks; drum, pail, tub and other container bodies.

Featuring Pinch Type Rolls, modern Niagara Slip Roll Forming Machines produce commercially true cylinders virtually free from flat spots, using thin materials as well as thick . . . and because of Niagara's unique slip roll features, completed cylinders can be removed easily and quickly without distortion, saving time and costs.

Find out how Niagara Slip Roll Formers (Series 6", 4", 3", 2", 1½" and 1") can turn out better work at greater profits for you. Write for Niagara's new, illustrated Bulletin 77 today. It will be mailed free . . . without obligation.

NIAGARA

NIAGARA MACHINE & TOOL WORKS • BUFFALO 11, N. Y.

DISTRICT OFFICES:

Buffalo • Cleveland • Detroit • New York • Philadelphia

Dealers in principal U. S. cities and major foreign countries

America's Most Complete Line of Presses, Shears, Other Machines and Tools for Plate and Sheet Metal Work

WHAT'S HAPPENING

(*Continued from page* 19)

Advertising Standards For Room Coolers

(*Continued from page* 19)

used, rebuilt, reconditioned, etc. Guarantee statements must be accurate and disclose material conditions or limitations, if any. The standards provide that no advertisement of a room air conditioner shall state or imply that the unit can be installed without alterations in present electrical circuits or wiring, or without additional expense for electrical installation, when such is not the fact.

The recommended standards are intended to apply equally to advertisements in newspapers, magazines, radio broadcasting, telecasting, direct mail, window displays, counter cards and advertising promotion in any form used or prepared for use of others by national advertisers and national or regional distributors of room air conditioners.

Steel Production Up To 97.2% of Capacity

STEEL PRODUCTION for the week beginning May 9 reached 2,345,000 net tons. This is 97.2 percent of the 1955 capacity, which is based on annual capacity of 125,828,310 net tons as of January 1, 1955.

Manufacturers' Shipments, New Orders on Rise

CONTINUED EXPANSION in industrial activity during March brought both manufacturers' shipments and new orders back to their previous highs, according to the Office of Business Economics, U. S. Department of Commerce. The upswing in new business was greater than that in sales so that backlogs of uncompleted contracts on producers' books rose further during the month. Book values of factory stocks were relatively unchanged from end of February totals.

The aggregate value of manufacturers' sales reached $27.6 billion in March — an increase of 10 percent from the corresponding month a year ago. The advance from February to March was about 5 percent larger than could be attributed to seasonal influences alone and returned the seasonally adjusted sales to the peak rates of mid-1953.

The relative stability which has characterized the movements in factory inventories since the first of the year continued through March. Book values of manufacturers' inventories, after allowance for seasonal movements, were the same at the end of the first quarter as at the end of December, though some $400 million above the September low.

To Study Reactions To Home Conditioning

THE FIRST of a series of annual market research studies of consumer attitudes toward air conditioning will be undertaken by the Du Pont Co. this summer as an industry service. Room air conditioners will be the focal point of the first survey and subsequent surveys will be devoted to such topics as central station residential air conditioning, commercial air conditioning, and industry sales practices. Results of the study are expected to be announced early next fall in time to provide the industry with factual information on which to base 1956 production and merchandising programs.

Plans for the first survey, to be conducted by an independent research agency on a personal interview basis in urban centers, were disclosed at the recent annual meeting of the Air-Conditioning and Refrigeration Institute by Robert J. Thompson, director of sales of the company's Kinetic Chemicals division. Mr. Thompson pointed out that "one of the most pressing problems in the industry today is the need for factual information on how people feel about air conditioning, why they buy it, what they like and dislike about it."

Work to Improve Housing Statistics

THE U. S. CHAMBER of Commerce recently endorsed proposals to improve federal statistics on residential housing. The proposals would authorize the Department of Labor's Bureau of Labor Statistics to make annual surveys of the characteristics of new, nonfarm housing placed under construction, the characteristics of housebuilders — methods of operation, financing, sales experience — and the amounts and types of labor involved in construction. The information on builders and labor, according to Miles L. Colean, a member of the chamber's subcommittee on construction statistics, in addition to being important in analyzing current market conditions, would be extremely helpful in planning for a wartime emergency.

Higher Water Bills For St. Louis Cooling

STARTING MAY 1, according to *House & Home*, water bills in St. Louis are $40 higher per year for each ton of capacity for owners of air conditioning equipment who do not use water conserving devices. The public service commission approved this surcharge after the St. Louis water company said it would have to increase eveyone's bills unless a serious drain on the supply by non-conserving air conditioning equipment could be curbed.

HHFA Sees No Danger Of "Overbuilding"

THERE NEED BE no fear that the country is "overbuilding," according to Housing and Home Finance Administrator Albert M. Cole. Speaking at a recent meeting of the directors of the National Association of Home Builders, Mr. Cole said that "there is an almost insatiable demand in this country for homes. Financing is possible and the market can be sustained at a high level for a long time."

High on Efficiency...Low on Cost

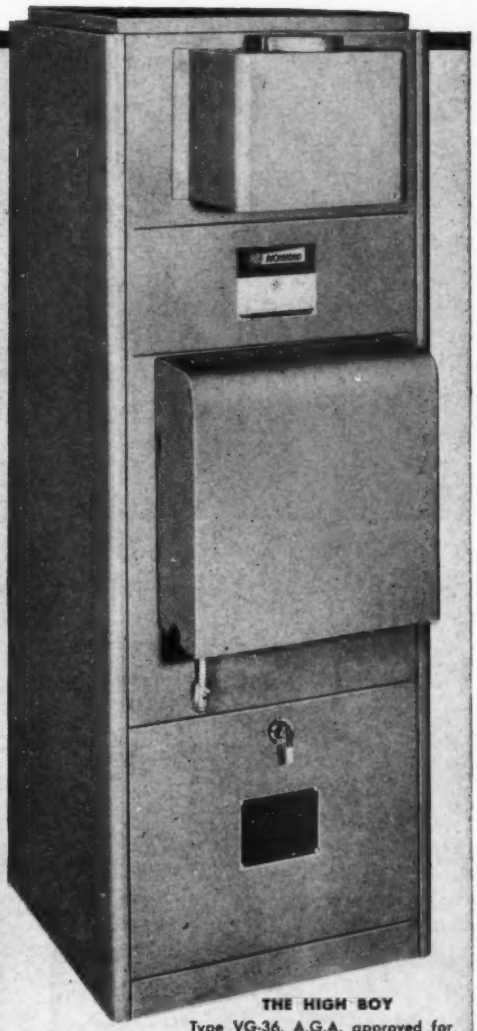
RICHMOND
BUDGETEERS

WINTER AIR CONDITIONERS

GAS-AND OIL-FIRED MODELS

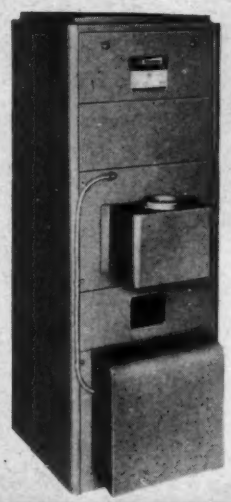
The "Four Budgeteers" offer the utmost in heating efficiency to meet today's demand for economical installations. Green enamel finishes are "Duridized" for maximum protection against rust and corrosion. All are insulated with heavy corrugated asbestos backed with aluminum foil. All feature effective spun glass filters, convenient service access.

WRITE FOR FREE TECHNICAL BULLETINS!



THE HIGH BOY

Type VG-36. A.G.A. approved for small spaces such as closets or utility rooms. Available with 70,000, 90,000 or 110,000 BTU/Hr. inputs. Type VO-71; 84,000 or 112,000 BTU/Hr. output at bonnet.

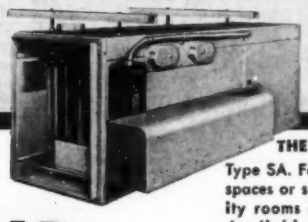


THE COUNTERFLOW

Type CG-46. For slab type homes or any perimeter system. Available with 70,000, 90,000 or 110,000 BTU/Hr. inputs. A.G.A. approved. Type CO-81; 84,000 to 112,000 BTU/Hr. output at bonnet.

THE LOW BOY

Type LG-16. For full or half basements or split levels, closets or utility rooms. 70,000, 90,000 or 110,000 BTU/Hr. inputs. A.G.A. approved. Type LO-61; 84,000 or 112,000 BTU/Hr. output at bonnet.



THE HORIZONTAL

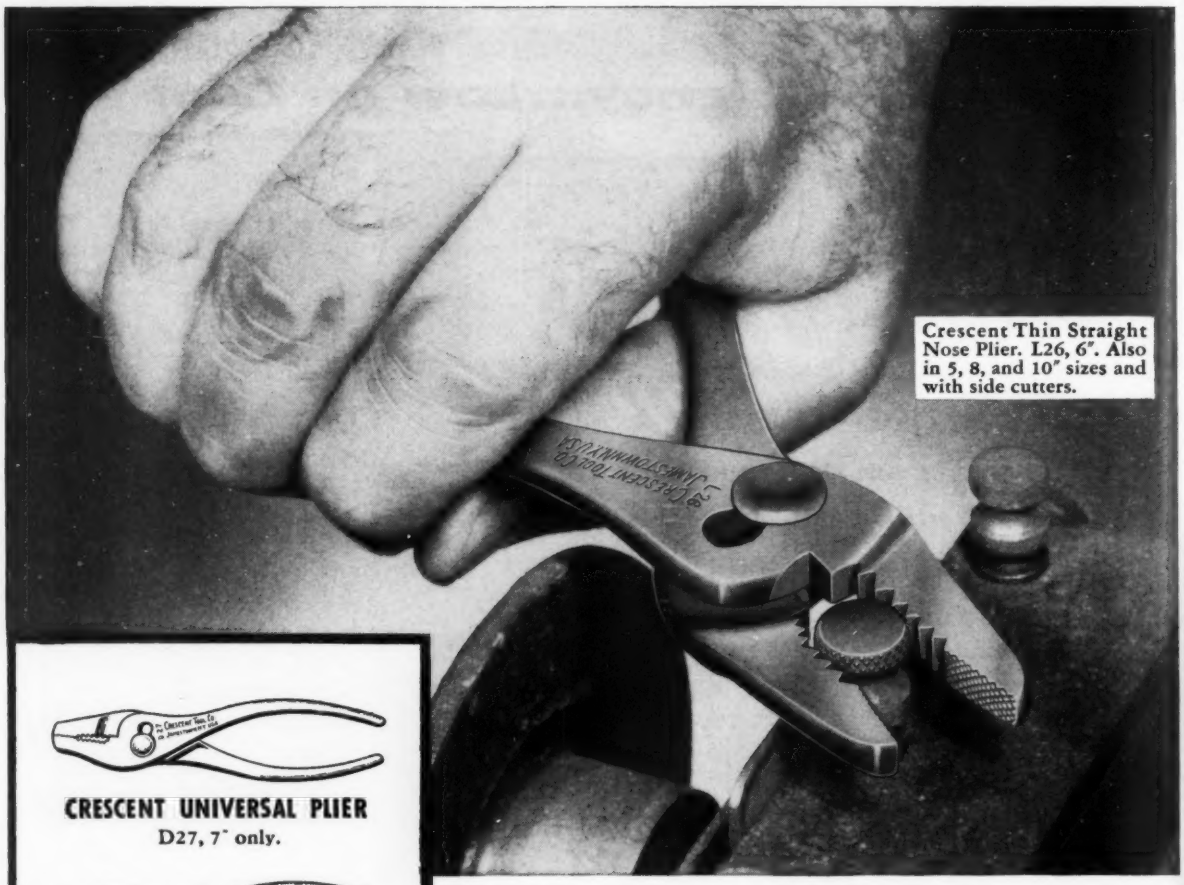
Type SA. For attics or crawl spaces or suspension in utility rooms and basements. Available with 60,000, 80,000, 100,000, 120,000 or 140,000 BTU/Hr. inputs. A.G.A. approved.

RICHMOND
RADIATOR COMPANY

16 Pearl Street, Metuchen, N. J.

AFFILIATE OF REYNOLDS METALS COMPANY

Look to *RICHMOND* for a complete line—automatic heating—central summer cooling units.



Crescent Thin Straight Nose Plier. L26, 6". Also in 5, 8, and 10" sizes and with side cutters.

CRESCENT UNIVERSAL PLIER
D27, 7" only.

MoToR KiT COMBINATION PLIER
G25, 5". Also in 6, 8, and 10" sizes.

CeeTeeCo COMBINATION PLIER
H25, 5". Also in 6, 8, and 10" sizes.

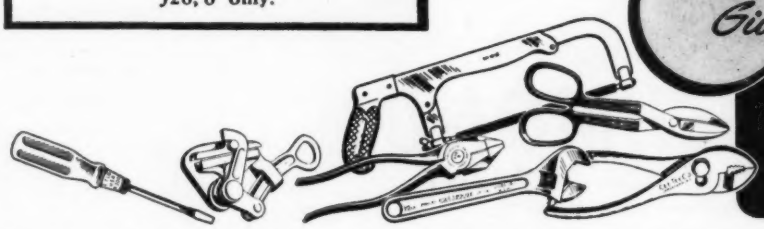
CRESCENT THIN BENT NOSE PLIER
J26, 6" only.

CRESCENT SLIP JOINT PLIERS

Crescent offers a wide selection of styles and sizes in this widely used plier type. All are drop-forged from special analysis steel and finished in bright plate. They have sharply milled teeth, comfortable handles and smooth working joints. The joint bolt and nut are turned from solid bar steel and case hardened. Sold by Industrial Distributors and Hardware Dealers everywhere.

CRESCENT TOOLS
Give Wings to Work
®

Sign of the Artisan
Symbol of Excellence



Crescent is our trade-mark, registered in the United States and abroad, for wrenches and other tools. Sold by leading distributors and retailers everywhere and made only by
CRESCENT TOOL COMPANY, JAMESTOWN, NEW YORK

Special Qualities

for all sheet metal work...

WEIRTON GALVANIZED STEEL

Whether it's complicated work for a special purpose or an everyday duct job, there's a Weirton galvanized steel to help you do it quicker—and better. Weirton's close control of quality through every step of the production process is carefully planned—and faithfully executed—to assure a tight coat that forms readily, looks better, and resists both peeling and flaking.

So when the job calls for galvanized steel, call Weirton and be sure. Let their experience serve you and your customers—to your profit.

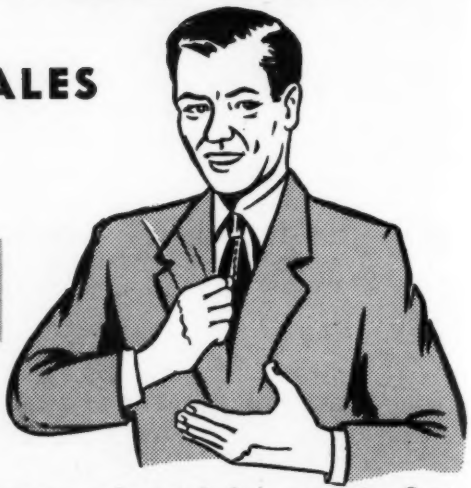
WEIRTON STEEL COMPANY
Weirton, West Virginia
a division of
NATIONAL STEEL CORPORATION

"LET'S FACE IT!"

FOR MORE FURNACE SALES WE'VE GOT TO GET

COZY

GAS-FIRED FURNACES



There's a reason why more and more dealers are getting COZY for more furnace sales. It's because COZY offers a complete line of gas-fired equipment, backed up by over a quarter of a century of customer satisfaction, that solves 90% of all heating problems. COZY also has the quality, design, and features that make it easier to sell. After you've compared it with other equipment, you're sure to tell your customers to *get comfort-fitted by getting COZY!*

Above is the famous *COZY* Forced Air Furnace available in either upflow or counterflow models of 140,000, 105,000, or 75,000 BTU input capacity. It has the exclusive "Curvic Heat Wringer." Comes completely assembled for easy installation; uses either four-inch piping or conventional ductwork.

The new *COZY* Horizontal Forced Air Furnace comes in five different capacities from 60,000 BTU to 140,000 BTU input. Easily installed in attic, utility room, or under floor, even without basement. Factory assembled and pre-wired. Adaptable for air conditioning.

Count yourself in on more volume sales to motels, hotels, small home contractors, apartments, stores, and offices with this efficient *COZY* wall heater. Available in four capacities, either single or dual installation with three types of temperature controls. Has efficient burner, large heat exchanger surface, and large air capacity. Wastes no space.

The *COZY* Challenger is the best buy in floor furnaces. Sliding end panels makes control easily accessible. Has many quality features including a ten-year warranty.

Write Today About Our High-Profit, Year-Around Sales Plan!

COZY

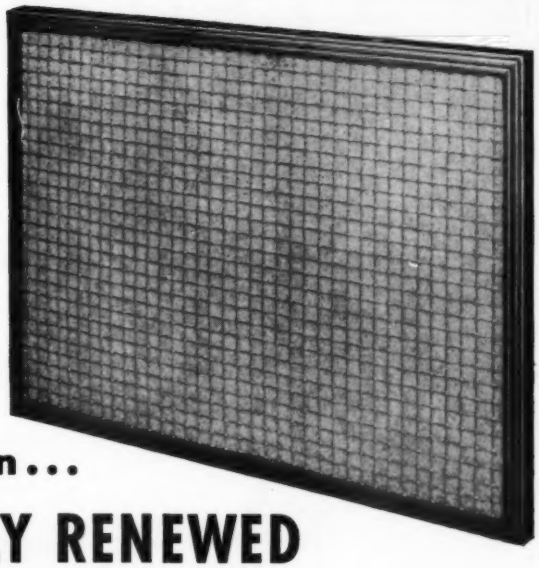
The ADVANCE FURNACE CO.

WICHITA, KANSAS

A "NEAT" SUGGESTION:

Fit your air-conditioning
or warm-air installations with

DYCON Type DY
permanent AIR FILTERS



to assure customer satisfaction . . .

QUICKLY, EASILY RENEWED
—without further cost!

Just RINSE *and* RE-USE
it's as simple and easy as it sounds

"NEAT" PROFITMAKER, TOO:

Worth more . . . sells for more—provides full mark-up and bigger profits. National advertising and promotion to boost your sales.

Contact your Continental representative, or write direct today for the profitable detail.

Efficient new plastic dry-type media traps dirt by accumulated static charge. Quickly and easily rinsed clean with cold running water—and immediately ready to be re-used, good as new. Sturdy aluminum frame. All standard sizes.

No more sluggish circulation due to wasteful dust-loaded filters.

AIR CONTINENTAL FILTERS

P. O. BOX 1647 LOUISVILLE 1, KY.

CONTINENTAL AIR FILTERS Inc.

BARBER COLMAN

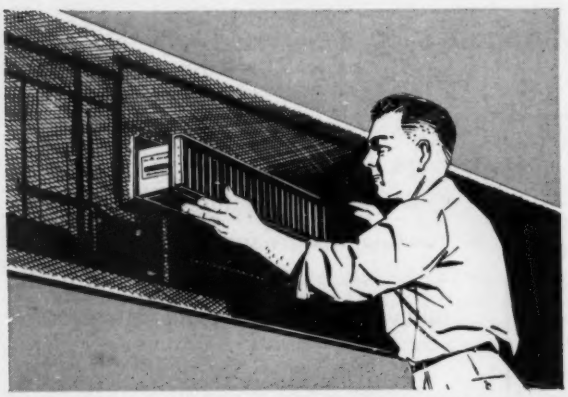
uni-flo Engineered Air Distribution

High velocity for space-saving air distribution

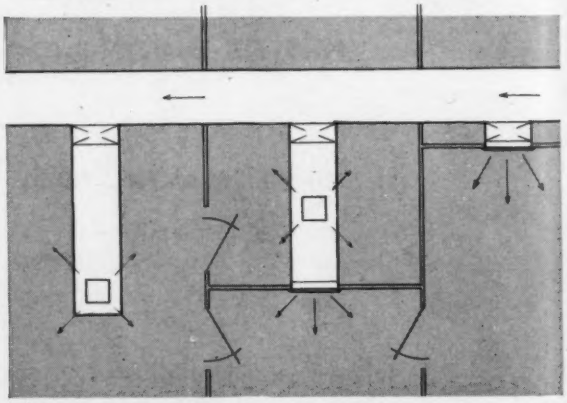
Contemporary design of the new Texas Eastern Transmission Corporation office building contributes to the beauty of the Shreveport, Louisiana skyline. This modern 14-story building is the home office of an organization which, in less than a decade, has become one of the major natural gas transmission companies in the country. Individual room fan coil units, using chilled and hot water, provide year-round air conditioning. Outside air for ventilation is supplied through a space-saving high velocity system.

Attractive appearance of the Barber-Colman air distribution equipment appealed to the architect. Uni-Flo Sidewall Diffusers provide efficient distribution of the air, free from drafts and disturbing noise. Each diffuser is individually adjustable for simplified balancing of the system.

Texas Eastern Transmission Corporation Office Building, Shreveport. *Architects:* NEILD-SOMDAL-ASSOCIATES, Shreveport. *Consulting Engineers:* CARY B. GAMBLE & ASSOCIATES, New Orleans. *General Contractor:* J. A. JONES CONSTRUCTION CO., Shreveport. *Mechanical Contractors:* HUFFMAN-WOLFE SOUTHERN CORP., Atlanta.



Uni-Flo Air Valve can be installed directly behind the grille to reduce high velocity air to conventional velocity for distribution. Air valve is adjustable through grille opening.



Flexibility of Uni-Flo Air Valve permits installation at junction of high velocity trunk ducts with conventional velocity branch ducts to supply several diffusers.

BLAZING THE TRAIL TO BETTER AIR DISTRIBUTION

***First* with high velocity air valves, accessories**

Since 1947, when Barber-Colman introduced the Uni-Flo Air Valve (used in the above office building), the space-saving benefits of high velocity air distribution have encouraged applications throughout the nation. High velocity makes the use of smaller ducts possible. The patented air valve transforms high velocity air to low velocity near point of room entry, with minimum turbulence and noise. Engineering help on high velocity applications is yours by calling our nearby Field Office, or writing us.

Barber-Colman Company

Dept. S, 1106 Rock Street, ROCKFORD, ILLINOIS, U. S. A.

Field Offices in Principal Cities

Air Distribution Products • Automatic Controls • Industrial Instruments
Aircraft Controls • Small Motors • Overdoors and Operators • Molded Products • Metal Cutting Tools • Textile Machinery

Washington Letter

Proposed Housing Bill — Bonanza for Contractors?

By Arnold Kruckman

• Slum clearance, additional military housing and new projects would provide more work

• Eased credit restrictions should provide new markets in the modernization field

• Customers would be able to pay for work faster, minimizing tied up or lost capital

CREDIT AND FINANCING discussion in Washington these days is naturally centered around the new housing bill enacted by the Senate which greatly exceeds administration requests. Heating-air conditioning dealers and sheet metal contractors will of course be affected by passage of the legislation, regardless of the extent of its modification in the House. These effects will be felt by the dealer and contractor not only in increased work provided by the new construction, but also in the credit stipulations which (1) increase the amount and ease of credit obtainable, and (2) enable the contractor to collect the full payment for his work in a shorter time.

The act provides that the federal government supply $7 billion, based on contributions of cash and credit underwriting in various forms, to create an independent Home Loan Bank board, bringing all these federal credit facilities under one concentrated control, with reserves accumulated since 1932 in various agencies such as FHA, and bring them all under direction and administration of the membership comprised of private banking and financial units; the whole would be almost identical in character and operation to the Federal Reserve Bank system which is credited with over $26 billion in reserves. Responsible government sources anticipate that the Home Loan Bank board reserves will substantially exceed this total.

All Phases of Building Affected

The 1955 Housing Act amendments, enacted by the Senate, in essence involve practically all federal institutions concerned with home building; with the equipment and installations, such as warm air heating, air conditioning and sheet metal products used in home building; and other types of urban and rural structures for which credit and cash frequently have been supplied in various ways by the national government.

Without exception, these building operations will be expanded in volume, and far more financial resources will be made available in the act passed by the Senate. For instance, low rental dwelling space is increased from 35,000 units a year for two years to 135,000 a year for four years to a total of 540,000 units. Over 100,000 military housing units are to be provided as quickly as possible, and an additional 200,000 later through the expenditure of $1.350 billion for the program.

A strenuous fight is expected in the House, and some authorities expect to see a drastic cutback made. The White House thus far has carefully refrained from making a decisive policy declaration. But its influences reportedly favor the Senate act.

Details are Important

Until Congress sends this act to the White House, and the President makes his decision, the whole pending public building program will not be sufficiently defined to clarify the credit pattern inherent in the complex building act of 1955 which has been called the most extraordinary law of its kind ever evolved by Congress.

Whatever the result of this Congressional debate, it is

(*Continued on page* 32)

Greatest COMFORT Story In

Coleman®

Blend-Air®

heating and cooling give the EVENEST temperature control ever developed!

Only Blend-Air holds temperatures so uniform, thanks to exclusive blending action! And Blend-Air is "pre-engineered" from furnace to outlets. Versatile 3½" round ducts fit between studs—give you the fastest, most flexible installation in any home, new or present.

Blend-Air Furnaces
Install separately or with Blend-Air systems. Complete range of sizes fit in basement, utility room, alcove, closet, attic or under-floor crawlspace. Blend-Air furnaces may be used with existing systems in older homes, or with conventional forced air systems in new homes.

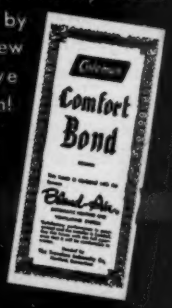
Blend-Air Cooling
Big EXTRA sales feature whether you install cooling now, or tell prospects how easily they can add it later. Works through Blend-Air system, or existing forced air system. Saves up to 97% on water cost, 25% on electricity proved in NAHB Air Conditioned Village, Austin, Texas.

EXCLUSIVE blenders are the secret

Unlike ordinary registers, Coleman blenders mix hot or cold air with room air—then circulate it wall-to-wall, floor-to-ceiling. Result: ideal comfort temperature. NO drafts! Gives true perimeter heating . . . PLUS individual room temperature control.

we back you with EXCLUSIVE $1,000 BOND

Make this guarantee your own—and close sales easier! It's the strongest guarantee of heating comfort in the industry—made possible only by Coleman's new and exclusive blender system!



Air Conditioning To Fit Every Home . . . EXACTLY!

With Coleman's new full line of vertical and plenum cooling units, you can tailor a system to the exact needs of any home. Various combinations of these new units allow "intermediate" cooling capacities. No more need to install over-sized systems. Coleman cuts initial cost, saves on operation, too!

The Coleman Company since 1900—makers of lamps, lanterns, camp stoves,

The Industry···SELLS for YOU!

Coleman

NATIONAL ADVERTISING pre-sells with full page ads like this →

Look to Coleman
...for air-conditioning and heating
to fit your home, your climate, your budget!
Blend-Air CENTRAL AIR-CONDITIONING

To Home Owners and future buyers! Month after month your prospects will read how easy it is to install Blend-Air, and how easy to own! TIE IN with Coleman. Generous co-op advertising plan . . . plus complete display, direct mail and demonstration material.

TO BUILDERS. Coleman advertising tells how they can use the $1000 comfort bond to help them sell—when you install Blend-Air for them! Recommend Blend-Air on your bids—and get profitable volume business with big developments!

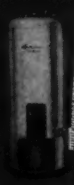
TIE IN!—MAIL COUPON TODAY!

The Coleman Company
WICHITA, KANSAS

Coleman

home heating and air conditioning.

COLEMAN Vit-Rock Gas Water Heaters



Backed by 10-Year Warranty and Exclusive $500 Bond!

Vit-Rock's solid rock lining separates water and metal—can't rust, ever! Backed by 10-year warranty and exclusive $500 Bond—the industry's strongest guarantee.

GAS • OIL • LP-GAS

The Coleman Company, Inc., Dept. AA-152
Wichita 1, Kansas

Please send me complete information on the Blend-Air System, Blend-Air Furnaces and Blend-Air Conditioners and Vit-Rock Gas Water Heaters. Have your distributor's representative call on me.

NAME_____

FIRM NAME_____

ADDRESS_____

TOWN_____ ZONE____ STATE_____

WASHINGTON LETTER—

(*Continued from page 29*)

reasonably certain the essence of the act will become law, and knowledge of the details is important to every contractor and dealer whose business is associated with the building industry.

The housing act amendments of 1955 are the result of hearings by the Senate Committee on Banking and Currency, which held executive sessions for the discussion of S89, S1022, S1412, S1501, S1565, S1642, S1744, S1766 and S1800. From these bills, and from amendments and suggestions received by the committee, including S2006 and S2045, the housing act of 1955 was drafted.

The committee reports: "The bill is a comprehensive measure designed to extend and clarify laws relating to housing, to assist our people to acquire good homes and to assist our communities to develop wholesome neighborhoods. In addition to general housing amendments, the bill provides programs in the areas of public facilities loans, college housing, armed services housing, smoke elimination and air pollution prevention, and farm housing."

The *Federal Housing Bulletin* of May, 1955 reports the number of new private dwelling units started in 1955 has been at a seasonally adjusted annual rate close to 1.4 million units. The *Federal Reserve Bulletin* reports the increased volume of housing starts in 1955, compared with 1954, reflects chiefly a doubling in the number of units started under arrangements for Veterans Administration guaranty. This accounts for 28 percent of private housing starts this year, a much greater proportion than in any previous comparable period.

Dr. Arthur F. Burns, chairman of the Council of Economic Advisers, a White House group, emphasizes the authority of both the FHA and the VA to limit the issuance of insurance commitments to keep local building in line with demand.

Surpluses Will Be Restricted

FHA considers housing demands generally strong in the great bulk of the markets. In a few localities it has found evidence of housing surpluses which the administrator has said should be dealt with as problems of the localities in which they exist. In some 18 localities FHA has restricted its commitments.

Title I of the National Housing act, authorizing the FHA repair and modernization program, would expire under existing law on June 30. The present bill extends Title I for five years; the most recent extension was from March 1, 1950 to July 1, 1955. The bill also increases from $2500 to $3000 the maximum amount of a home improvement loan under the Title I program. The $2500 ceiling was established in 1934 and naturally does not take into account the increases in the cost of home repairs which have occurred since that date.

FHA insurance for this type of credit encourages lenders to make the loans available to eligible borrowers, particularly in smaller communities, who might otherwise have difficulty in arranging loans. Without such insurance, credit for home repair purposes would be as readily available as consumer credit for other consumer durable goods, such as automobiles and appliances.

In other fields the dealer frequently receives credit support from the manufacturer. In the case of home repair loans, however, a manufacturer of building products is likely to have a relatively small financial interest in the repair or improvement job done by the local firm. The manufacturer or wholesale supplier is thus rarely interested in backing up credit for a repair or improvement job, especially when the largest cost item is labor at the site.

Administration estimates of operations during the 1956 fiscal year predict a gross use of credit and cash totaling about $7.4 billion.

Advance Commitments Authorized

As a second step to make this program operative, the bill authorizes the Federal Mortgage Association to make advance commitments to purchase cooperative housing mortgages in a total amount not to exceed $50 million. Not more than $5 million of this special authorization will be made available in any one state.

The Federal Home Loan Bank Board would be an independent agency.

The board and the Federal Loan Insurance Corp. will be removed from the Housing and Home Finance Agency. The board was the first of the existing agencies established by Congress, in 1932, to assist in the financing of home construction and purchase. It is a regulatory agency; according to Congress it is "administrative, legislative and judicial — analogous to the Federal Deposit Insurance Corp. and the Federal Reserve Board. It is a mutual institution, owned entirely by its members. No appropriation of federal funds is made for its operation. All stock held by the government in the Federal Home Loan banks has been retired and Congress deems there is no longer necessity for any higher stock ownership. The law provides that at no time shall the aggregate advances by a Federal Home Loan bank exceed twelve times the amount of bank stock held by the member institution.

It is provided the Federal Savings and Loan Insurance Corp., within 60 days after the approval of the bill, shall retire all its capital stock—amounting to about $66 million—by paying the par value of the stock to the treasury. The corporation is expected to finance itself by issuing debentures to the Federal Home Loan banks in a face amount equal to the par value of the treasury stock to be

(*Continued on page 34*)

Lead the field with **CENTURY**

tomorrow's air conditioning TODAY!

NEW 1956
CENTURY SUMMER-WINTER AIR CONDITIONING

At least a year ahead of the industry, Century anticipates the future with the most advanced line of silent, compact, beautiful air conditioners so far engineered and produced—from the standpoint of both the homeowner and you.

SILENT COMPACT. Century air-cooled and water-cooled remote condenser units bring new selling opportunities. Offer them with Century forced air heating units, or for addition to most existing gas or oil fired basement, utility or horizontal forced air units. The remote compressor—and in air-cooled models the remote condenser—may be put wherever convenient for silence and space saving. In this sense, you can offer "custom units" to your prospects.

EASILY INSTALLED. When used with existing furnaces, the 1956 Century air conditioner uses the same duct-work blower and filters as the heating system. The silent, compact cooling coil unit becomes a part of the furnace; the remote compressor can be in another room so that its moving parts will not be heard in the system. In air-cooled systems the remote condenser can be outdoors, for abundant air and to preserve silence. Shipped complete with Freon charge and copper tubing; furnace units shipped preassembled with gas or oil burner mounted and factory-wired.

Get your share of Century combination residential summer-winter air conditioning profits! Clip the handy coupon for more information and send it today!

Changes from heating to cooling, or cooling to heating by merely setting the thermostat—no need to change dampers—another good selling point.

CENTURY
ENGINEERING CORPORATION
CEDAR RAPIDS, IOWA

Please send complete information on the industry-leading Century Residential Summer-Winter Air Conditioning to: AA

Company_____

Attention_____

Address_____

City_____ State_____

HEAT OR COOL WITH
Vectaire
PERIMETER
BASEBOARDS

World's most beautiful baseboard • The IMPERIAL
styled by VECTAIRE • priced to sell

Fits flush with wood baseboard
Available in 5' and 10' lengths
"Push button" heat control

WRITE FOR FACTS AND FIGURES
VECTAIRE MFG. CO.
Melrose, Mass.

WASHINGTON LETTER —

(Continued from page 32)

retired. Under Title II the act authorizes revival of the authority once vested in the Reconstruction Finance Corp. and gives the Housing and Home Finance Agency the power to undertake public facility improvement, such as sewage and water distribution systems. A fund of $100 million would launch the program.

The Secretary of Health, Education and Welfare would cooperate in building structures and installing equipment to control and prevent air pollution, the funds to be administered by the Housing and Home Finance Agency.

Under the Housing and Home Finance Agency additional funds of $122 million are supplied for the special purpose, each year, of providing farms with safe and sanitary housing. This is in addition to the funds provided under the Bankhead Jones Act, and an additional $100 million supplied under the housing act. The appropriation is to cover other farm building in addition to housing.

Slum Clearance Encouraged

It is especially emphasized that the benefits of the national housing act shall be made available to families living in what is called an urban renewal area, which is apparently a transformed slum area. The housing act is amended to increase from $35 million to $70 million the amount of capital grant funds which may be given to an individual state over and above the 10 percent limitation previously applicable.

Senator Prescott Bush is not satisfied with the independent status given the Home Loan Bank board. He issued a formal statement in the committee report demanding that the question should have further study, partly because of certain statements he attributed to Mr. Walter W. McAllister, chairman of the Home Loan Bank board. Senator Bush also emphasizes that the proposal to give the Home Loan Bank board an independent status was added to the adopted act without hearings being scheduled on it and without introduction of special legislation in the Senate.

As suggested earlier in this letter, the housing agencies, Veterans Administration and other government organs which have to do with loans, insurance, grants and credits for the many different types of housing and public improvements have been confused and rather reluctant either to act on or discuss any new problems of housing until the national housing act of 1955 finally clarifies the whole situation.

The more than 10,000 lending institutions which handle the business and are approved by the government include every type of legitimate lending facility. Their rates of interest, the carrying charges they set and the other details of cost for financing may sound different as they emanate from different government agencies; but in essence there is very little difference between the charges authorized by FHA and by the Veterans Administration. Naturally, lending institutions, limited by government terms, often seek to do business privately with those who need the funds. But we are told that when things are moving under normal circumstances there are relatively few loans or underwritings handled by lending institutions in "private enterprise."

Counsel is Available

Most contractors, dealers and other business people know that the Housing and Home Finance Administration and FHA are represented by offices and officials with considerable authority to do business in 26 principal cities of the country. There are 50 additional communities in which FHA and HHFA maintain headquarters — a total of 76 throughout the country — where the businessman may secure sound first hand counsel and information about many of the questions that may arise, and problems that need solutions. The names of the responsible officials in the various localities will be supplied by this correspondent on request through the editorial offices of American Artisan.

Add New Glamour to your heating jobs with Electronic Moduflow!

Thermostat outside the house

gives your customers luxurious electronic comfort

Now you can add glamourous new sales appeal to your heating jobs—install Honeywell Electronic Moduflow Temperature Control to highlight your heating plants!

Moduflow has been wonderfully redesigned to give it even stronger impact as a sales feature. Its new styling will add greatly to the decor of your customers' homes.

Electronic Moduflow is service-free, easy to install, *completely automatic,* and reacts with electronic swiftness. It makes all other control systems obsolete because it features an electronic thermostat *outside* the house that varies indoor temperatures as the weather changes. This is the ultimate in home comfort!

Electronic Moduflow is ideal for any house with an adequate heating or cooling plant! *And it assures a greater profit margin!*

See your Honeywell salesman or supplier right away for costs and availability . . . or write to Honeywell, Dept. AA-7-95, Minneapolis 8, Minnesota.

(Clock shown is primarily for utility room use. Deluxe burnished chrome, flush mounted models available for kitchen.)

New Outside "Weathercaster" Thermostat

With electronic swiftness, the Honeywell Weathercaster continually senses outside temperature changes and tells the indoor thermostat what adjustment is necessary to maintain perfect comfort.

New Inside "Golden Circle" Thermostat

Your customer simply dials the daytime and nighttime temperatures he wants with this beautiful thermostat. He just sets it *once*. Thereafter, the outside thermostat raises or lowers settings *automatically* as outdoor temperatures change.

New Electronic Control Center

This handsome new appliance-white clock is styled for the utility room or kitchen. It receives electronic signals from the indoor thermostat and adjusts the heating or cooling plant accordingly. In winter, it *automatically* lowers the temperature at night to save fuel, and raises it in the morning.

For heating or cooling

MINNEAPOLIS Honeywell

Electronic Moduflow

112 OFFICES ACROSS THE NATION

This is an ad to Builders, but it concerns your business! It appeared in July "House & Home" and August "Practical Builder."

with Rustproof Ducts of

REYNOLDS ALUMINUM

Both the building developments shown are in suburban Philadelphia—Merion Homes in Merion, Pa., Haverford Park Apartments in Ardmore. They offer a wide variety of design. But they have this in common...although they are not now air-conditioned, they are *engineered for year-round air conditioning.*

They have rustproof duct systems of Reynolds Aluminum. When summer cooling units are installed, the resulting condensation on duct walls can cause no trouble. The owners avoid rust damage that otherwise could mean costly replacement, even to tearing down walls.

Builders are making a feature of "future" air conditioning—ready to be plugged in. Reynolds is promoting this important trend in national magazines and on network TV. Tie in with this promotion and identify your ducts as rustproof aluminum—Reynolds Aluminum.

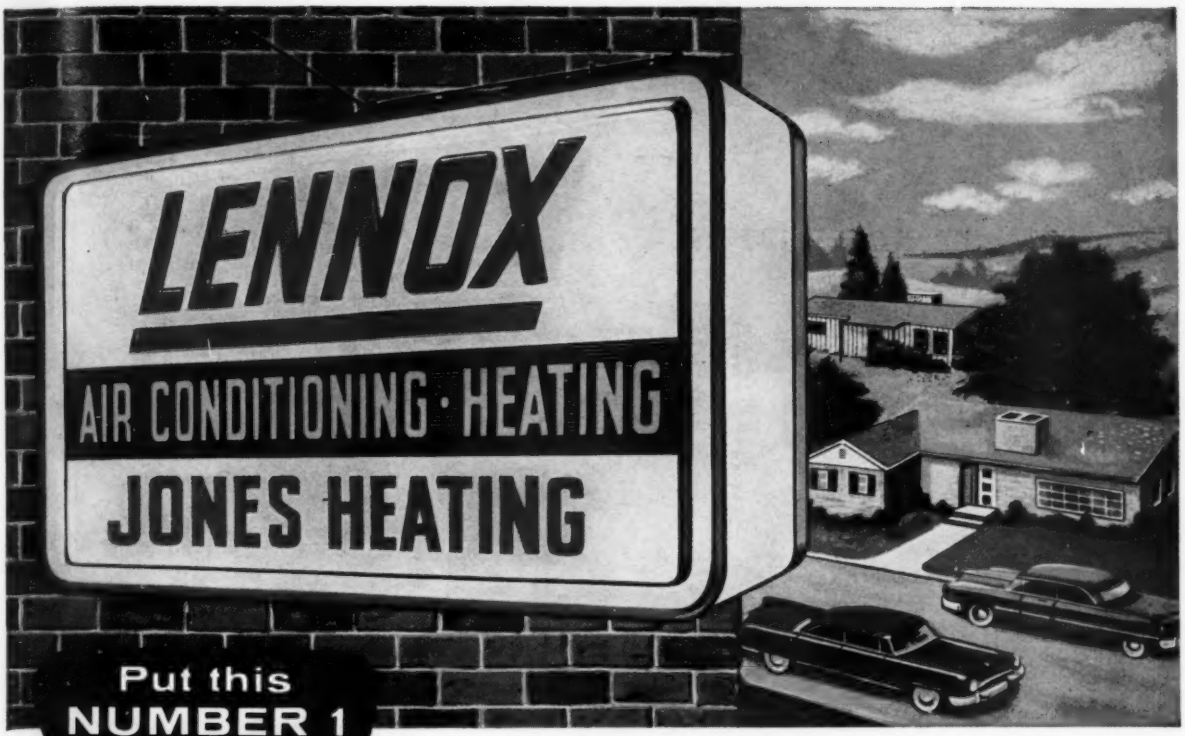
Merion Homes, above, as well as the Haverford Park Apartments, below, were built by Madway Engineers & Constructors of Wayne, Pa. Heating contractor: Farewell & Holt, Chestnut Hill. Reynolds Aluminum duct sheet from National Builder's Supply Company, Inc., Radnor, Pa.

Ducts of Reynolds Aluminum in Haverford Park Apartments.

Signs for your Building Sites Available... Consumer Literature for Distribution...also "Designed in Aluminum" Seals for Identification. Write to Reynolds Metals Company, General Sales Office, Louisville 1, Kentucky.

Designed in REYNOLDS ALUMINUM

REYNOLDS ALUMINUM



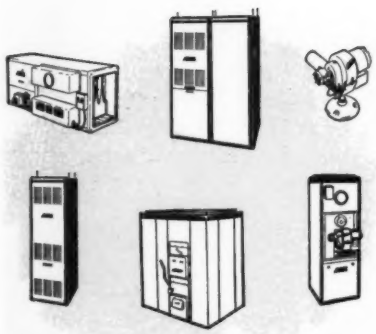
Put this NUMBER 1 NAME next to yours

Be the No.1 name locally!

YOU'LL SELL MORE... **Both heating and air conditioning ...Profit more than ever with *LENNOX***

From coast to coast . . . from Toronto to Texas . . . more dealers than ever are displaying the Lennox sign. It bears a name you can proudly place beside your own . . . because for over 60 years the name Lennox has been associated with dependable, economical home comfort. And now this number one name in warm air heating is bringing you the outstanding "deal" today. The finest products in the industry . . . the most complete line to sell: over 100 heating and air conditioning models . . . the greatest dealer assistance program in the entire industry including an exclusive tailor-made sales kit for your builders. Supported by one of America's biggest *consistent* national advertising programs, too. Get the facts . . . find out *why* the Lennox dealer is *the* prominent dealer locally.

In warm air heating more families buy LENNOX than any other make.



MAIL COUPON FOR INTERESTING PROFIT STORY

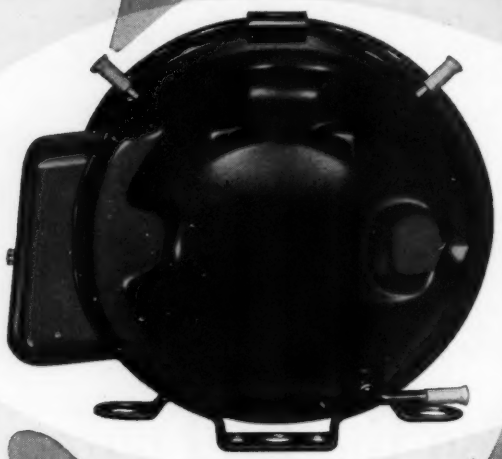
The
LENNOX FURNACE COMPANY
Marshalltown, Iowa
Syracuse, N. Y. • Columbus, Ohio
Salt Lake City, Utah • Los Angeles, Calif.
Ft. Worth, Texas • Decatur, Ga. • Des Moines, Iowa
In Canada: Toronto and Calgary

THE LENNOX FURNACE COMPANY
(Address your nearest branch. See locations at left.)

I'd like to have information about the heating and air conditioning opportunities for Lennox dealers. I understand this does not obligate me in any way.

COMPANY NAME_____
ADDRESS_____
CITY_____ STATE_____
MY NAME_____

you're looking at 5 *hermetic compressors*



MODELS P81, P8112, P61, P5312
single cylinder
hermetic compressors

THE FAMOUS *Tecumseh* PANCAKE
IN 1/8 — 1/6 — 1/5 H.P.

the same compact dimensions in a greater horsepower range

HOUSEHOLD REFRIGERATORS **FREEZERS** **VENDING MACHINES** **WATER COOLERS**

Here's another achievement in Tecumseh's constant research to provide the refrigeration industry with functional compressor design and more efficient operation. The Tecumseh "Pancake" 1/8 and 1/6 H.P. compressor, recognized by the industry for its small size, low cost and high capacity, is now available in 1/5 H.P.

This means 5 compressors with the same outside dimensions, and yet offering a choice of 3 different fractional horsepower ratings. Manufacturers of household refrigerators will benefit because they may now use the pancake design on most models, thus saving tooling and production costs. Freezer, water cooler and vending machine manufacturers will be able to take advantage of the pancake's small size in their design. All will gain needed space and still maintain top efficiency.

Internal spring mountings, force feed lubrication and a new, specially designed piston give smoother, quieter operation. Tecumseh's "Pancake" compressors also feature a welded steel shell which dissipates motor heat. This is aided by the cooling action of the suction gas and in some cases an oil cooler is added for faster cooling action and better efficiency.

See your Tecumseh representative for complete information on how you can save time and money by standardizing your production line with the flexible Tecumseh pancake.

• *over 21,000,000 Tecumseh compressors in use today*

The World's Largest Producer of Compressors for the Refrigeration Industry

TECUMSEH PRODUCTS CO.

Marion, Ohio
Tecumseh, Michigan
Danville, Illinois

EXPORT DEPT.—P. O. Box 2280, 24530 Michigan Ave., W. Dearborn, Michigan

WHAT THE ASSOCIATIONS ARE DOING

WARM AIR HEATING and air conditioning panel hear W. J. Kuhn explain the latest residential air conditioning estimating and installing techniques. James H. Welch moderated the forum

GUEST SPEAKERS and convention committee go over program. (*L to R*) R. Foster Walton, Aaron Newman, Don Brown and Leroy Still

Georgia Presents

18 Points for Your Consideration

THE ROOFING and Sheet Metal Contractors' Association of Georgia met June 9 to 11 in Savannah to elect James H. Welch president for the coming year. L. D. Herndon was elected vice president; W. M. Jones, Sr., treasurer; and B. L. Noblitt, executive secretary. New directors are Charles A. Sapp, Wendell Townsend, J. D. Faulkner, Jr., Jack Davis and J. L. Widener.

Capsuled comments and ideas from the seminars on warm air heating, residential air conditioning, sheet metal fabricating, roofing, apprenticeship training, insulation and sales tax follow:

1. Only two percent of the sales potential for residential air conditioning has been sold.

2. You'd be surprised at the overhead items overlooked when figuring job costs.

3. The results reported in December 1954 American Artisan by Gilkey and Bahnfleth on the value of insulating a residence are startling.

4. If the Sales Tax division of the State Revenue Department will make clear its definitions of what is expected of the sheet metal contractor, members of RASMCAOGA will be glad to comply.

5. Associate your name with all advertising connected with the activities of your firm.

6. All salesmen should experience the problems faced by installers of heating and air conditioning equipment.

7. Almost one ton of refrigerating capacity of an air conditioning system can be saved when one additional inch of insulation with a heat transfer coefficient of 0.1 Btu per sq ft per deg is added to ceilings with less than 4 in. of insulation and covering 1000 sq ft. (Based upon roof surface temperature of 180 deg).

8. Potential worth of a permanent employee can be recognized early by a contractor who cooperates with the National Joint Sheet Metal Workers Apprenticeship Training Program.

9. Higher prices of shop and hand tools are being offset by the higher efficiencies of the new models.

10. Ten percent of all new homes to be erected in Georgia can be sold air conditioning this year.

11. Insulation more than pays its way when installed according to recommended practices.

12. Coordination of activities of local, state and national trade associations is more important now than at any previous time.

13. The National Joint Sheet Metal Workers Apprenticeship Training Program has been responsible for more effective development of the skills of apprentices — more contractor participation is needed.

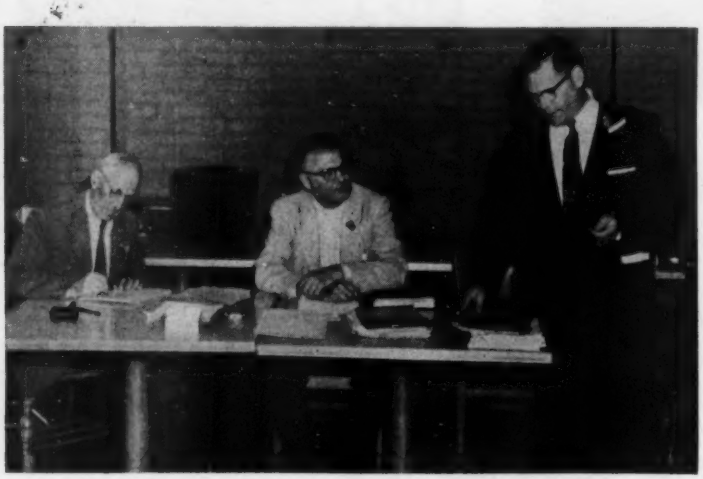
14. Judicious use of your photograph in the advertising program is good business.

15. Door to door canvassing in Georgia is now showing better results saleswise than any other method.

16. Furnace capacities are being varied by means of interchangeable blower packages to deliver air volumes as required to meet geographical requirements.

17. Houses in the air conditioned experimental village clearly showed that insulation in the walls and ceiling resulted in the lowest summer operating costs.

18. Recommend to the customer that the extra branch ducts required for summer cooling be installed at the time a forced warm air system is sold.



APPLICATIONS for plastic materials in the sheet metal industry are explained by A. T. Ihde (*right*). An interested listener is R. S. Schmieder (*center*), secretary of the Wisconsin association. Taking notes is E. H. Schield

EXPLAINING the operation of electronically operated controls systems is H. D. Kurtz (*left*). Assistance is provided by T. A. Jones. The latest features include inside-outside thermostats and combination master control-kitchen clock assembly for "pride of ownership" appeal

Sheet Metal Contractor Says

"I Use Plastic Materials"

. . . because it's another service I am well equipped to offer my customers and it has a market potential that cannot be ignored

AT THE RECENT DISTRICT MEETING of the Sheet Metal Contractors' Association of Wisconsin held in Racine, A. T. Ihde, Milwaukee sheet metal contractor, told his fellow association members about the rapidly expanding market for rigid and flexible polyvinyl chloride materials. He named a sheet metal contractor in Boston who did a $350,000 volume during 1954.

In explaining why he felt that the sheet metal contractor was the person to fabricate and sell this material, Mr. Ihde said that jurisdictionally it has been approved by the Sheet Metal Workers' International Union for inclusion in the standard form of labor agreement and that the application of this material to highly corrosive installations is reducing the quantity of replacement work normally done by sheet metal firms specializing in fume removal work.

Another reason given for the sheet metal contractor doing this work is the service to the customer — it being preferable that the contractor who fabricates the hood, tank or other parts from sheet metal also do the lining of these parts.

In describing the fabricating techniques used to form, shape and weld this material, Mr. Ihde recommended that the manufacturers' instructions be fol-

JZ evaporative cooler

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It's New

- "FULL-VIEW" MODELS
- SO-O-O QUIET
- EFFICIENT
- LOW INITIAL COST
- INEXPENSIVE TO OPERATE

The low cost of the John Zink Evaporative Cooler does not stop with buying it—there are years and years of quiet, efficient operation to follow at MINIMUM cost.

NO OTHER TYPE OF COOLING IS SO SATISFACTORY AND INEXPENSIVE TO OPERATE.

Yet see how the luxury graytone finish harmonizes with your interior, while giving long-life protection outside.

The wonderful cooler that brings "mountain-fresh" air to the hot dry summer.

from

JOHN ZINK COMPANY

T U L S A , O K L A H O M A

lowed, as these vary with the different materials on the market. However, in general, he said that the rigid sheet can be formed when heated to about 260 F. The welding of seams, etc. is done with the aid of a torch discharging hot air at about 400 F. A plastic rod very much like the common welding rod used for metal joints is used.

The big difference between welding plastic materials and metal is the number of times it is necessary to retrace the original plastic weld. Sometimes it is necessary to make three or four passes, he said.

Describe Functions of Electronic Controls

The district meeting also had other subjects of importance to the sheet metal-warm air heating and residential air conditioning dealer. The latest information, both technical and selling, on the electronic control systems in use today was given by Harrison D. Kurtz and Trevor A. Jones, Minneapolis-Honeywell Regulator Co. These men displayed the components of the year 'round, inside-outside thermostat circuit and described the function of each.

A recently developed sales feature, Mr. Kurtz said, is a combination kitchen clock-master control. This, he pointed out, is an added feature that tends to bring the product to the fore, to give it eye appeal. Promotional efforts such as these aid in the development of the *pride of ownership* appeal that makes the public more conscious of the products being made for their comfort.

The importance of *How to Sell Quality* was brought out through the medium of photography. A 25 minute film shown by William Ferry, Wendell Franks & Associates, outlined how the planned approach can result in an upgraded sale that benefits the customer as well as the dealer.

Warns Against Hasty Legal Action

THE ROOFING and Sheet Metal Crafts Institute (New York City) urges its members to think twice before engaging in expensive and time-consuming lawsuits. First of all, it suggests, the contractor should find out if a reputable lawyer agrees that he has been damaged, and then he should consider whether the amount he might collect would be worth the time, effort and money required if he takes his case to court. The association points out that there is always the possibility that "the other fellow," after thinking things over, will be willing to settle out of court, and it strongly recommends trying to find an acceptable solution either through personal discussion or by submitting the case to impartial arbitration.

Coming Events

Aug. 4—Chicago Warm Air Golf Association, golf meet. River Forest Golf Club. Melvin A. Jackson, President, c/o Wolverine Tube Div., Calumet & Hecla, Inc., 1580 Sherman Ave., Suite 406, Evanston, Ill.

Sept. 27—Chicago Warm Air Golf Association, golf meet. Ruth Lake Country Club. Melvin A. Jackson, President, c/o Wolverine Tube Div., Calumet & Hecla,, Inc., 1580 Sherman Ave., Suite 406, Evanston, Ill.

Nov. 1-5—World Symposium on Applied Solar Energy, Westward Ho Hotel, Phoenix, Ariz. Sponsored by the Association for Applied Solar Energy, Stanford Research Institute and the University of Arizona. Lewis W. Douglas, Chairman, Suite 204 Mayer-Heard Bldg., Phoenix.

Nov. 27-29—National Heating & Airconditioning Wholesalers, Inc., fall annual meeting and convention, New York. Wilbur R. Bull, Executive Director, 1200 W. Fifth Ave., Columbus, O.

Nov. 28-29—National Warm Air Heating and Air Conditioning Association, board and committee meetings. Hotel Statler, New York. George Boeddener, Managing Director, 640 Engineers Bldg., Cleveland 14.

Nov. 28-Dec. 1—Air-Conditioning and Refrigeration Institute, 9th Exposition of the Air-Conditioning and Refrigeration Industry. Atlantic City, N. J. George E. Mills, show director, 9th Exposition of the Air-Conditioning and Refrigeration Industry, 1346 Connecticut Ave., N. W., Washington, D. C.

Nov. 30-Dec. 1—National Warm Air Heating and Air Conditioning Association, annual convention. Hotel Statler, New York. George Boeddener, Managing Director, 640 Engineers Bldg., Cleveland 14.

Jan. 23-25—American Society of Heating and Air-Conditioning Engineers, Inc., annual meeting. Sheraton-Gibson Hotel, Cincinnati. A. V. Hutchinson, Executive Secretary, 62 Worth St., New York 13.

June 18-20—American Society of Heating and Air-Conditioning Engineers, semi-annual meeting. Shoreham Hotel, Washington, D. C. A. V. Hutchinson, Secretary, 62 Worth St., New York 13.

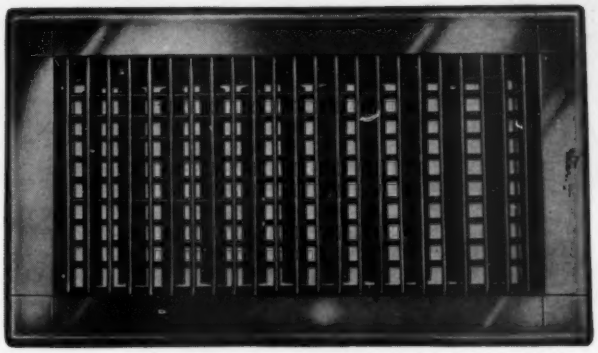
502 EAST EIGHTH ST.
504 EAST EIGHTH ST.

H&C PROUDLY *Announces*

ITS NEW TRIPL-AIRE (NO.92 SERIES)

REGISTERS & GRILLES FOR COMMERCIAL INSTALLATIONS

Drop in at your H&C Jobbers and see this grand new line of registers and grilles specifically designed for commercial installations. It's complete, providing every desirable element an installer could wish for . . . and every item is built, as you would expect from H&C, to the very highest standards of quality construction and efficient performance.



No. 92 VHV

26 STANDARD SIZES

(LARGER SIZES UP TO 36" x 30" AVAILABLE)

EACH IN 10 COMBINATIONS OF VERTICAL and HORIZONTAL FACE BARS AND LOUVERS.

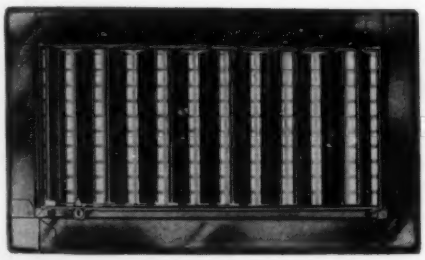
QUICKLY and ACCURATELY ADJUSTABLE TO PROVIDE ANY COMBINATION OF AIRFLOW DEFLECTIONS DESIRED.

OPPOSED LOUVERS DELIVER AIR EQUALLY TO ALL PARTS OF THE FACE . . . ASSURE UNIFORM DISTRIBUTION.

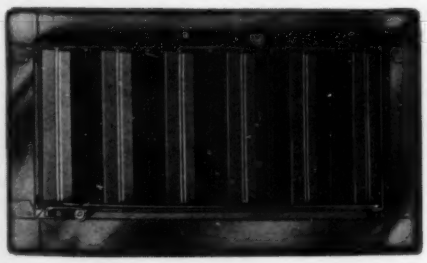
OPPOSED LOUVERS AFFORD PERFECT MEANS OF VOLUME CONTROL. SETTINGS FROM 0 TO FULL OPEN ARE QUICKLY MADE WITH KEY FROM FRONT OF FACE . . . AND POSITIVELY HELD UNDER ALL CONDITIONS.

LOUVERS ARE AIRTIGHT WHEN CLOSED . . . ALWAYS OPERATE QUIETLY.

RUBBER GASKET PROVIDES LEAKPROOF SEAL BETWEEN FACE AND WALL.



Rear views showing louvers partially open and completely closed. Settings, easily made from front of face with key provided, are positive and tamper-proof.



HART & COOLEY MANUFACTURING CO.

PRODUCT OF THE WORLD'S LARGEST and MOST PROGRESSIVE PRODUCERS OF REGISTERS and GRILLES

TECHNICAL SECRETARIES H. T. Gilkey (research), left, and G. A. Voorhees (application) discuss some of the new data presented by the technical committee

COMPARING NOTES between meetings in the corridor are (back to camera) A. L. Walters, *Left to right,* Randall Nelson, Paul Gannett, C. M. toeLaer, H. C. Gurney, Robert Main and Homer Brundage

NWAHACA Committees Map Plans to

Step Up Industry Aid

. . . with tools discussed at committee and board sessions during semi-annual meetings

INDUSTRY problems and plans underwent thorough scrutiny June 9 and 10 as members gathered for the semi-annual committee and advisory board meetings of the National Warm Air Heating and Air Conditioning Association in Chicago.

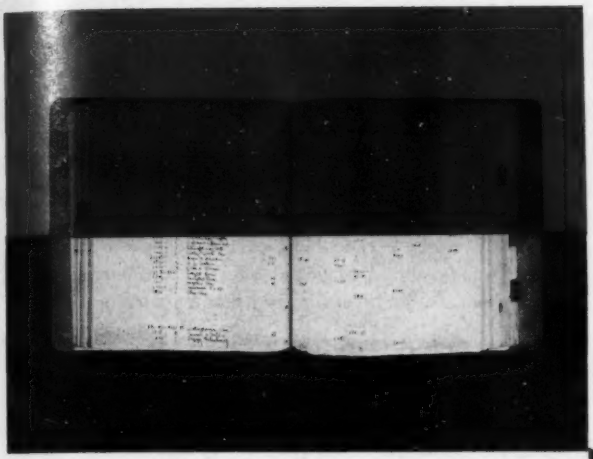
All phases of the industry are represented in these committees — dealers, manufacturers, distributors, engineers, salesmen, research men and college faculty.

The short course committee reported highly successful schools held at Michigan State, Penn State, Purdue, Oklahoma A & M and Iowa State, and mapped tentative schedules for ensuing courses. Representatives from North Dakota and Wisconsin universities attended the meeting and made plans for short courses to be conducted at their schools next spring. Mississippi A & M was also reported to be interested in conducting similar sessions. Chairman B. F. McLouth promised additional promotional backing by the association for the schools' short courses. Revised study plans will be offered in future short courses, under three basic headings: Plan A is a small residence for which various types of heating systems will be designed; Plan B is a larger home in which both heating and cooling will be calculated and duct systems designed; in Plan C, heating, cooling and ventilating systems will be worked out for a small drug store with a lunch counter and grille which would influence loads.

The Manual 9 committee reported approval of the cfm method for coordinating air delivery requirements under both heating and cooling conditions, which was developed by C. L. Grandstaff and his associates and which appears in full in the June and July issues of American Artisan.

The Manual 10 committee recommended revision and streamlining of tables and methods for obtaining round duct capacities.

The technical data committee reported on its progress in preparing data on temperature drop and pressure loss in 3, 4, and 5 in. duct based on existing



KEEP THE JOB OUT OF THE RED WITH UTILITY'S

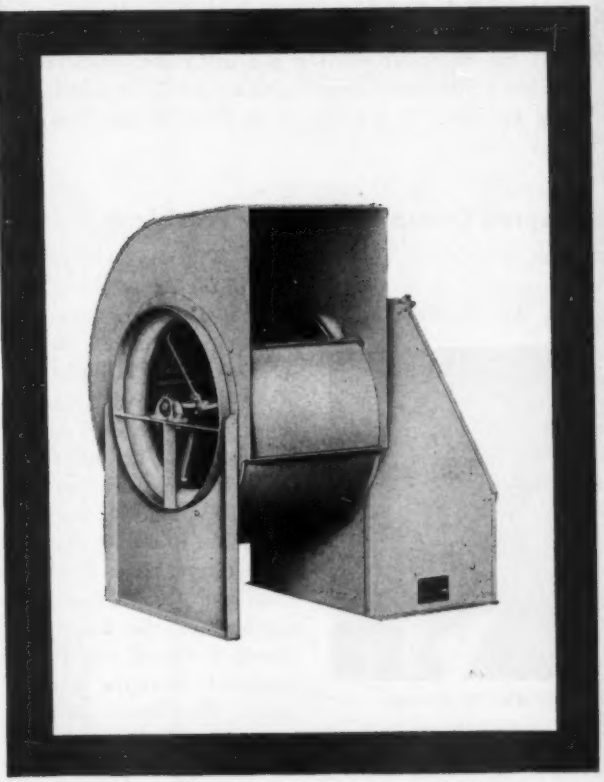
NEW ENCLOSED DRIVE BLOWERS 10″ TO 36″

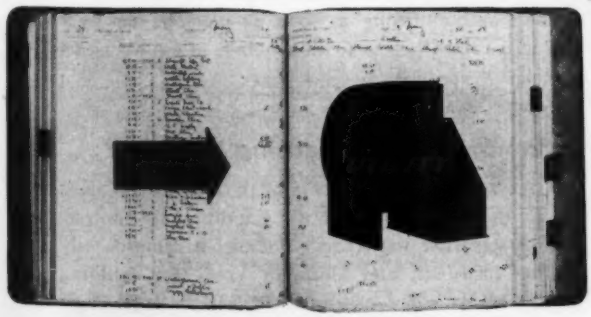
You've demanded it — Utility has perfected it for you — a full series of high quality enclosed drive blowers designed to withstand prolonged wind and weather abuse to provide long life with low upkeep.

Easy to install, these blowers require a minimum of floor space. Completely self-contained unit-pulleys, V-belts and motors are accurately pre-engineered. Weatherproof enclosures for motors and drives make these blowers ideal for outdoor installation.

Because roof installations are forgotten, they frequently break down from lubrication neglect. To prevent this, all sizes feature permanently sealed, pre-greased ball bearings, requiring no further lubrication — forever impervious to dirt, dust, moisture and drastic temperature changes.

Here is another example of Utility quality and value — the factors which help you sell the job in the first place, insure your profit in the second. Plan with Utility... and know you'll never see red on any job!





Manufacturers of Heavy and Standard Duty Blowers for Heating, Air Conditioning and Ventilating Installations. Producers of Blowers and Blower Parts for Original Equipment manufacturers.

Let us send you full information on Utility Blowers. Write...

UTILITY FAN CORPORATION

911 EAST 59TH STREET, LOS ANGELES 1, CALIFORNIA

A DIVISION OF UTILITY APPLIANCE CORPORATION

data for larger duct. The committee recommended continuation of investigation of friction loss in smaller ducts, heat regain and heat losses from basements.

E. B. Root, chairman of Manuals 1, 2, 3, 5 and 8 committee reported that heat loss tables in Manual 3 have been expanded to include new types of construction. The committee stressed that bonnet output specifications for a furnace need only equal the total heat loss of the structure including the basement and crawl space.

Manual 6 has been revised to include a rearrangement of the sequence of information it contains and the short form for CAC has been brought up to date.

Other committees reported on progress achieved since the December meeting and will make complete reports at the next annual meeting which is scheduled for Nov. 30 and Dec. 1 at Hotel Statler, New York City.

Dayton Group Elects New President

CARL T. COWAN, owner of the Williamson-Cowan Furnace Co., is the new president of the Dayton Heating, Air Conditioning, Sheet Metal & Roofing Contractors' Association. He succeeds Robert L. Butler of the Butler Heating Co. Other officers elected at the recent annual meeting include Mark L. Dooley, vice president, and George C. Brake, Orville S. Derringer, Vance Heymann and John Kenney, members of the board. Harold E. Carroll was reappointed executive secretary. Mr. Butler and John Moellering, retiring vice president, will remain members of the board. At the conclusion of the meeting, Vance Heymann, who is also president of the Ohio state association, appointed Mr. Butler chairman of the state group's convention which is scheduled to be held in Dayton next February.

Carl T. Cowan

New OHI Distribution Secretary

CHARLES BURKHARDT has been named national secretary of the distribution division of the Oil-Heat Institute of America, replacing Fred Burroughs who recently resigned to join Oilheating Market Reports, an organization set up by a group of oil companies to study oil markets and make recommendations to them relative to their participation in oil heat promotion at local levels. Mr. Burkhardt has had many years of experience in teaching and writing on various oil heating subjects and in the sales and promotion of automatic oil heating. He served as chairman of OHI's education committee for two years, and prepared the association's course for service schools. One of his courses is now in use in the New York trade schools and in other trade and technical schools. Previously he was general manager of Paragon Maintenance Co., Mineola, N. Y., a service and maintenance operation.

Chicago Opens Golf Season

THE CHICAGO WARM AIR GOLF Association opened its 1955 season at Southmoor Country Club, Palos Park, Ill. on June 7. Rainy weather held down attendance, but 29 showed up and got the year's program off to a good start. Dan Collins, Peoples Gas Light & Coke Co., won the low net trophy for the day. He was followed by Otto Zeman, Mel Jackson, Frank Schroeder, Reid Olson, Lars Schulein, C. E. Price, Robert Ingeman, Ray Hubbs, Robert Weaver, H. T. Repple, Harry Himelblau and W. Cherullo. Blind bogey winners were Trig Johansen and Mel Jackson.

Rochester Reelects Officers

THE BOARD OF DIRECTORS of the Master Sheet Metal, Furnace and Roofers' Association of Rochester, N. Y., Inc. recently met to elect officers for the coming year. It was decided that since the incumbent officers had done such a fine job during the past year, they should continue in office for another year. They are: president, Lamont W. Childs; vice president, Fred Pike; treasurer, Lester Wilson; and secretary, Richard Friday.

Secretary Friday reports that the state association is trying to prepare a statewide heating code to be presented to the state legislature when it convenes in Albany in January 1956. He urges members to cooperate with the state association in this effort by signing and returning as soon as possible the questionnaires recently sent to all members of the Rochester group.

Kalamazoo Hears Heating Inspector

SPEAKERS at the June meeting of the Kalamazoo Sheet Metal, Roofing, Heating & Air Conditioning Contractors' Association were Fred Madaus, Kalamazoo city heating inspector, and Meredith Vind, city building inspector. Mr. Madaus discussed various aspects of heating and air conditioning and Mr. Vind reported on code problems and methods for more effective enforcement. The meeting, open to all licensed dealers in the city as well as association members, drew a record attendance.

LOOK what RHEEM has NOW . . .

3 NEW OIL BURNING FURNACES

with a new "AIRFOIL DESIGN" inside for faster, better heating

HERE'S WHY THEY'RE

. . . more efficient

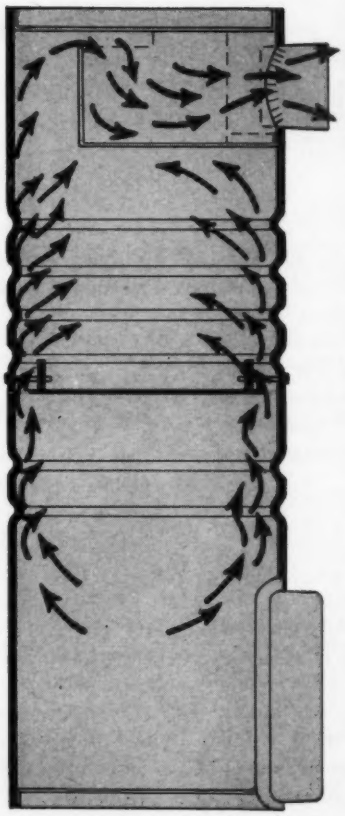
Rheem's new "airfoil" convolutes on the sides of the heat exchanger keep the upward flue gas flow turbulent—so the cooler gas is mixed thoroughly with warmer flue gas along the sides. The result—faster, even heating of the heat transfer surface. Chrome-steel combustion chamber, instead of ceramic type, transfers heat rapidly, makes heat exchanger more efficient.

. . . comfort-quiet

Oil burner is rubber-mounted to eliminate vibration noises—it's sound-insulated even where the burner enters the cabinet. Flexible joint construction in combustion chamber does away with expansion and contraction creaking. Quiet as a cloud.

. . . and convertible to gas

All seven of the new oil-burning models are designed and built so that they may be easily converted to gas operation. It's another important Rheem feature.



NOW . . . with gas and oil-burning furnaces, plus a full line of space heaters and air conditioning equipment . . .

Rheem Manufacturing Company

Sparrows Point, Maryland · Chicago, Illinois · Houston, Texas
Seattle, Washington · Richmond, California · South Gate, California

Rheem is out front again—with a new idea in home heating—and with three oil-burning furnaces (7 different models) to help keep Rheem Dealers in the driver's seat with builders and home owners everywhere. For now there are Rheem Highboy, Lowboy, and Counterflow models—all engineered for oil fuel—with 90,000, 112,000, or 140,000 b.t.u.'s per hour bonnet capacities. But there's more than that to talk about. Just look at all the new Rheem features!

THE RHEEM LINE'S REALLY COMPLETE!

Every Rheem Furnace Is Fire Tested

Industry Must

Give Customer What He Wants

. . . in residential air conditioning according to the latest evaluation of the data obtained from the Air Conditioned Village research project

NEARLY EVERYONE has experienced the benefits of air conditioning in theater, department store or office buildings. However, the interest in residential applications has been growing rapidly for the last four years. Many associations and engineering societies have investigated the residential air conditioning field to find out how it fits into their scope of activities. Such a meeting was held by the American Society of Refrigerating Engineers June 15 in Milwaukee during its 42nd semi-annual conference.

A panel consisting of Ralph A. Gonzalez, Airtemp division, Chrysler Corp., as moderator and C. W. Nessell, Minneapolis-Honeywell Regulator Co.; Ned A. Cole, Fabricon Co.; D. V. Petrone, Typhoon Air Conditioning Co.; and I. P. Sharpe, Air Conditioning division, General Electric Co. as members, presented information on some of the early findings at the Austin, Texas Air Conditioned Village, where 22 homes have been undergoing extensive investigations to discover new and more effective ways to select, install and service residential air conditioning equipment.

Austin Tests Reveal Some Problems

Mr. Nessell said, "The complete report on the Air Conditioning Village will not be ready until sometime this fall. However, an analysis of the data already examined indicates that the sizing of liquid lines should be watched, as some of the installations are failing to produce their rated capacities due to too small liquid lines. Also, reduced air flow over evaporators and air cooled condensers is failing to produce the capacity as given in manufacturers' catalogs. Thus, inside temperatures are not being maintained on maximum outside temperature days.

"Humidity migration from homes using crawl space has been greater than anticipated, even though FHA requirements are complied with completely. Thus, additional information on indoor humidity control must be unearthed to reduce latent heat loads on the cooling equipment," he added.

Mr. Cole said that air conditioning for residences is fast becoming less a luxury and more a necessity. Many builders are planning to include cooling equipment as standard requirements in their specifications for homes they now have on the drawing board.

During the past year, in various interviews with people living in the Air Conditioned Village, a file of about 2000 pages has been accumulated. These notes indicate that once a person has become accustomed to year 'round air conditioning he does not want to live in any other type of building, that the housewife has more time to do other things because less cleaning is required, that better meals are prepared due to the air conditioned atmosphere, and that the health of children is better than that of children living in nearby houses that are not air conditioned.

Consider the Human Factor

Mr. Petrone said residential air conditioning is strictly a human comfort problem and that industry members must look toward human judgment factors both now and in the future, that people are more important than instruments tend to show.

People in the Air Conditioned Village have indicated they prefer continuous air circulation, temperatures between 75 and 78 F dry bulb, and relative humidities less than 60 percent.

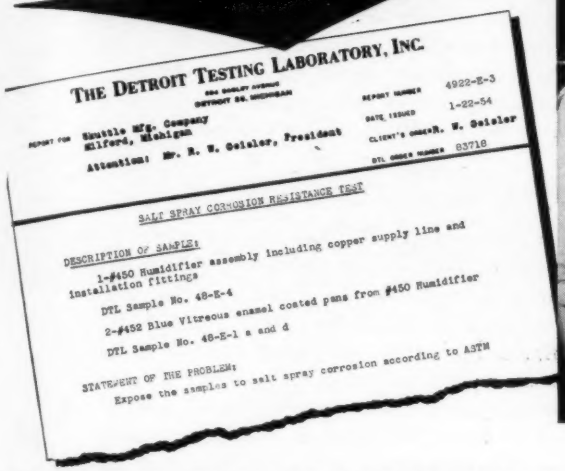
Packaged air conditioning equipment is proving more satisfactory than remotely installed equipment. Simplification of installations instead of gadgets is preferred.

Satisfy Customers' Desires

Mr. Sharpe said it is the job of our industry to give the customers what they want along with what they need. Among those items of which the customer is not aware is prewiring of cooling equipment to enable the house electrician to deliver electric power to one point and not have to be concerned with complicated wiring diagrams beyond that point. Another item is

He's trying to give a humidifier ulcers

Skuttle—the first to give humidifiers breakdown tests to improve quality



THE DETROIT TESTING LABORATORY, INC.

REPORT FOR Skuttle Mfg. Company, Milford, Michigan
Attention: Mr. R. W. Geisler, President

REPORT NUMBER 4922-E-3
DATE ISSUED 1-22-54
CLIENT'S ORDER NO. R. W. Geisler
DTL ORDER NUMBER 83716

SALT SPRAY CORROSION RESISTANCE TEST

DESCRIPTION OF SAMPLES:
1-#450 Humidifier assembly including copper supply line and installation fittings
DTL Sample No. 48-E-4
2-#452 Blue Vitreous enamel coated pans from #450 Humidifier
DTL Sample No. 48-E-1 a and d

STATEMENT OF THE PROBLEM:
Expose the samples to salt spray corrosion according to ASTM

This technician at The Detroit Testing Laboratory, Inc. is doing his best to *make* Skuttle Humidifiers corrode—to give them "ulcers". Those clouds are salt spray—the recognized method of speeding up corrosion—finding weaknesses quick.

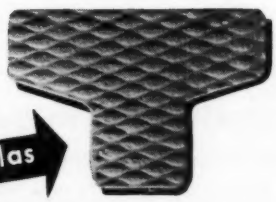
For almost a year now, Skuttle has retained the services of this laboratory—to make independent unbiased tests of Skuttle Humidifiers. They take our regular production units and give them the works—worry and bedevil them every way they can think of to see if they can produce breakdowns.

We're glad to report that they haven't had much luck in breaking them down—Skuttle Humidifiers are *good*. But any time their reports have shown an opportunity to improve the product, Skuttle engineers have taken prompt advantage of it.

Skuttle is the *first* and *only* maker of humidifiers to run tests such as these.

The purpose—to give you a better Humidifier to sell—the public a better humidifier to use.

The best humidifier is no better than its evaporating plates Skuttle has:



Patented Vapoglas

The plates evaporate the water to diffuse the moisture. A humidifier simply can't humidify without good plates.

By every test—by a wealth of records of use, patented Vapoglas plates are far the best. They are standard in Skuttle Humidifiers.

7016

Skuttle
MANUFACTURING COMPANY
MILFORD, MICHIGAN

Standardize on Skuttle—the line is complete—parts are interchangeable

Skuttle Series 600

The most popular and successful of all humidifiers for many years. More than two million of them are in use today. It's the humidifier for warm air furnaces of the standard type, including winter air conditioners.

Skuttle Model 450

Hangs on the side of the heater—evaporating plates reach into air stream. Useful in counterflow, highboy, floor furnaces and space heaters, where space doesn't permit use of a Series 600.

Skuttle Models 750 and 760

Similar in general to the 600 and 600 B. Installed in the main duct. Does an exceptional job, particularly in heaters where the duct is the only place you can put a humidifier. Model 750 has the flushing feature—Model 760 is non-flushing.

the incorporation of noise reducing devices on the original equipment so the customer need not spend extra money to isolate equipment noises.

Among the many interesting revelations of the Air Conditioned Village experiment has been the need for the warm air heating dealer to educate home builders in providing sufficient space to accommodate the air conditioning equipment.

GREETINGS are extended by B. L. Noblitt *(center)* to Ferris S. Ritchey, Jr. and Art Thys while Leroy Still discusses program of Georgia convention with Jack Halfacre

Visitors Enjoy Georgia Program

PLANS FOR HOLDING an annual convention are being formulated by the Roofers' and Sheet Metal Contractors' Association of Alabama. The group recently sent executive secretary Ferris S. Ritchey, Jr., vice president Jack Halfacre and advisor Art Thys to attend the annual convention of the Roofing and Sheet Metal Contractors' Association of Georgia. The success of the Georgia association has been the result of carefully made plans and it was felt that many of the activities of the Georgia group could be adapted to meet the needs of the members of the Alabama association.

Icelanders Visit Milwaukee Group

FOUR SHEET METAL workers from Iceland recently visited several cities in the United States to study methods and techniques used in sheet metal shops in this country. In Milwaukee, their itinerary was arranged by R. S. Schmieder, executive secretary of the Sheet Metal Contractors Association of Milwaukee, Inc., who took them on a tour that included visits to Biersach & Niedermeyer Co., Louis Hoffmann Co., and Reinke and Schomann, Inc. Because their visit was considered "news" the Icelanders — as well as members of the Milwaukee association — were guests on a television news program and were interviewed by studio personnel.

This is a type of free publicity frequently accorded the contractor-dealer who takes part in civic affairs — and more and more contractors are becoming aware of the value of such publicity in planning their public relations programs.

Receive Industry Awards

EDWARD ESTERLINE, executive secretary of the Greater Philadelphia Fuel Conference, and Alan Johnson, fuels consultant, recently received special industry awards for their outstanding contributions to the Pennsylvania oil heating industry during the year 1954. John M. Sibarium, oil heating consultant and educational counselor to the association, made the presentation.

ASHAE Meets in Oklahoma City

OVER 240 MEMBERS and guests of the American Society of Heating and Air-Conditioning Engineers attending the society's recent regional meeting in Oklahoma City heard reports by ASHAE president John E. Haines and director of research Elmer R. Kaiser as well as reports on residential cooling, removal of moisture, pressure losses of divided-flow fittings, and a new method of calculating air conditioning loads.

Mr. Haines reported on his activities since assuming the presidency in January, and Mr. Kaiser described some aspects of the society's current $245,000 research program. One of the papers presented was *Weather Data Analysis for Cooling System Design* by Gene E. Sullivan, Carrier Corp. sales engineer; George V. Parmelee, senior research supervisor, and A. N. Cerny, research mathematician, both of the ASHAE research laboratory This is a report on combining air temperature with sun heat to arrive at a temperature for determining summer air conditioning loads. Figures used are based on New Orleans weather data compiled for several years.

NHAW Works on Plans for Future

MEMBERS of the National Heating & Airconditioning Wholesalers Inc. are now working on a number of the plans proposed and approved at the group's recent convention. These include plans for the publication in manual form of the courses conducted at the Ohio dealer school and preparation of a comprehensive sales training program. Other plans include the preparation of a pamphlet on eliminating unfair competitive practices; a survey of the members to determine what they want in the way of statistics and what they are able to give from their records; and a survey to determine the need for group insurance. The association also plans to prepare a format which may be followed in planning conventions and meetings.

The security of Quality

The man who depends on his heating dealer's judgment is in good hands. His home will enjoy the security of quality — its safety, economy, dependability. A record of more than 15,000,000 Field Draft Control installations stands as proof of your unwavering loyalty to quality.

IELD CONTROL DIVISION
H. D. CONKEY & COMPANY, Mendota, Illinois
Affiliates { Conco Building Products, Inc. • Brick, Tile, Stone
Conco Materials Handling Division • Cranes, Hoists

field

ELD TYPE "M", domestic, mmercial, and industrial dels for oil and coal fired ating plants. Sizes 6" through

FIELD TYPE "MG", double acting models for commercial and industrial gas fired heating plants. Sizes 8" through 32"

FIELD TYPE "RC", for domestic oil and coal fired heating plants. Sizes 7" and 9" for 6" through 10" flues.

1955

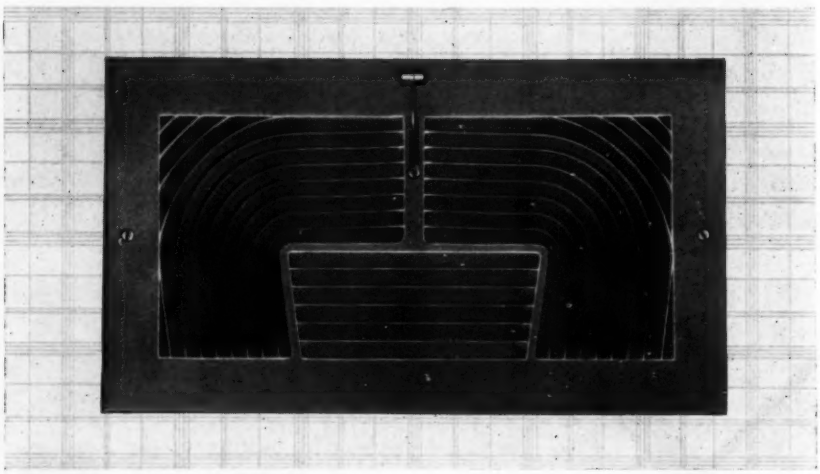
The No. 105 U.S. SIDEWALL
The No. 106 U.S. BASEBOARD
DIFFUZAIR
Really spreads the air!

The No. 105 U.S. SIDEWALL DIFFUZAIR

The Astounding Diffuzair spreads the AIRFLOW A FULL 180° — with an equal F.P.M. at every degree of Diffusion Pattern. An even air-spread in a TRUE SEMI-CIRCULAR PATTERN. The WONDERLINE that gives you WONDERFUL RESULTS.

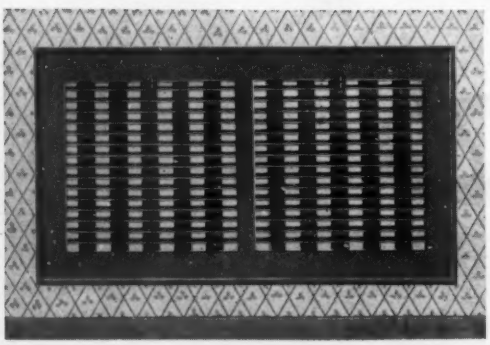
The No. 106 U.S. BASE DIFFUZAIR

LOWEST RESISTANCE — MOST ATTRACTIVE DIFFUZ-AIR. Same broad diffusion as No. 105 in baseboard Out-Of-Wall Setting. Now ready for shipment to give you the GREATEST SAT-ISFACTION EVER.



No. 145 VVL BASEBOARD AIR CONDITIONING REGISTER

Change the ENTIRE SYSTEM in 5 MINUTES from Summer Cooling to Winter Warming



HOW? By merely changing the horizontal bar setting from summer-cooling position of 60° upflow to winter-warming grille-bar setting of straight, or desired down-flow, position. A NEW DISCOVERY For You. The 145 VVL A-C REGISTERS *CAN BE* installed in standard residential partitions and still PRESERVE THE FULL STACK HEAD CAPACITY on combination Residential Heating and Cooling Systems.

THE NO. 145 VVL IS THE ALL-PURPOSE LINE YOU'VE SEARCHED FOR!

SEND FOR LATEST U.S. CATALOG — NO. 55-6

UNITED STATES REGISTER COMPANY

BATTLE CREEK, MICHIGAN

MINNEAPOLIS • KANSAS CITY • ALBANY

SOLD BY LEADING JOBBERS FROM COAST TO COAST

Year 'round profit with Janitrol

summer cooling winter heating

combine cooling with heating . . .

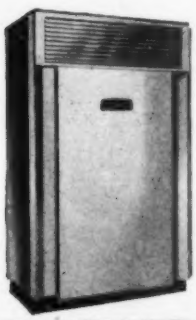
Each year, more and more new homes are being equipped with year 'round conditioning. Modernizing old homes with the addition of central cooling is another fast growing market. With the Janitrol cooling line, you have quality-engineered equipment designed for fast-simplified installation in new or old homes.

Six models of Janitrol 2, 3 and 5-ton units meet most cooling load requirements. There are also 8, 10 and 15-ton models for larger homes. The full hermetic-sealed refrigeration system is warranted for 5 years.

install commercial cooling . . .

Build your profits by keeping busy all year 'round with commercial air conditioning. These Janitrol packaged conditioners, sized from 2, 3, 5, 8, 10, 15 tons, are completely self-contained in attractive cabinets. Free-standing installation requires only attachment to electricity, water and drain. Adjustable, 4-way outlet louvers permit draft-free cooling.

The 5, 10 and 15-ton models have twin cooling circuits, designed so you can sell 2-stage operating economy and comfort performance. Single-stage models are available in 2, 3, 5 and 8-ton sizes.



get space saver cooling jobs . . .

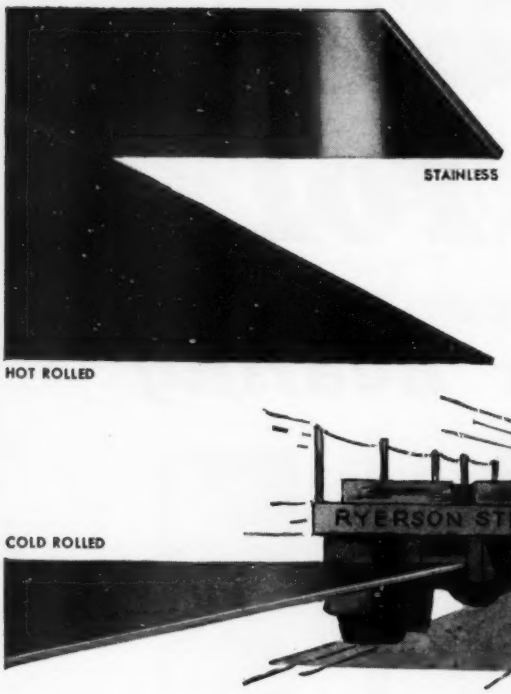
Janitrol 2 and 3-ton horizontal units enable you to make installations not convenient with upright models. Units floor supported or suspended can be located in the attic or crawl space. Can be used as unit air conditioners commercially or in residences with an accessory blower package, or in combination with a forced air heating system which has sufficient blower capacity.

WHOLESALERS—CONTRACTORS

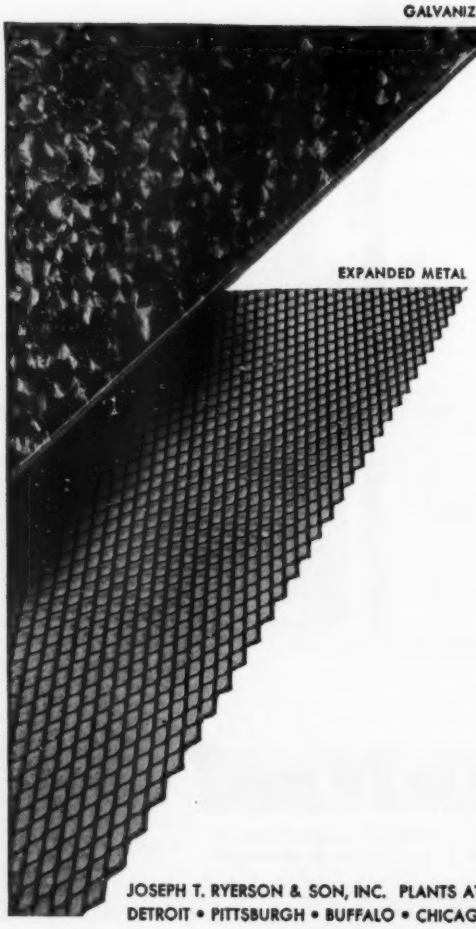
Write for facts about air conditioning profit opportunities in your area.

Janitrol
HEATING AND AIR-CONDITIONING DIVISION

SURFACE COMBUSTION CORPORATION • COLUMBUS 16, OHIO • *In Canada: Alvar Simpson Ltd., Toronto 13*



Sheets Quickly



more than 20 kinds in stock

You get the sheets you need without delay when you call your nearby Ryerson plant. That's because we carry the world's largest stocks—an unusually wide range of gauges and pattern sizes in more than 20 types. Whether you need a single sheet or a truck-load, pattern size or cut-to-order, we can assure you of immediate delivery.

Ryerson galvanized sheets are a special tight-coated type that form readily without peeling or flaking—are bright and clean with uniform spangle. Workable Ryerson stainless is all time-tested Allegheny Metal, with the high quality finish that will please your most particular customers. Ry-Ex Expanded Metal is available in two types, standard and flattened, both types with all sharp edges removed.

MACHINERY AND TOOLS. And when you need metal-working machinery or tools, again you can depend on Ryerson. Your nearby Ryerson plant supplies —and unreservedly guarantees—every type used by sheet metal shops.

So, for fast action on your every requirement . . . call Ryerson.

RYERSON STEEL

Principal products: Carbon, alloy and stainless steel, bars and band iron, angles and channels (black and galvanized), welded and seamless tubing, plates, sheets and strip, etc.

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • PHILADELPHIA • CHARLOTTE, N. C. • CINCINNATI • CLEVELAND DETROIT • PITTSBURGH • BUFFALO • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO • SPOKANE • SEATTLE

editorial

What Builders Want to Know

AMONG THE RECENT meetings we have attended was that of a home builders' association. It was interesting to hear what these people had to say about the contractors who perform the specialty services for them. It was pleasant to learn that they hold the warm air heating-residential air conditioning dealer in high esteem. Some of the remarks we heard show that warm air heating dealers are recognized for their honesty and integrity. The home builders told us the dealer usually indicated that better heating systems could be installed, but too often not enough concentrated efforts were made to upgrade the job. The builders seemed to think that had they been given the same sales attention other prospects receive, even better heating and cooling systems would have been installed in the homes they erected.

When asked to express their opinions about the kind of dealer with whom they would prefer to deal, they indicated that the dealer's reputation was of primary importance — that he should have a reputation for doing quality work and for standing behind each job until 100 percent satisfaction is given the homeowner.

It was felt a dealer could build this type of reputation only if he supervised his installing crews closely and offered 24 hour service, seven days a week.

Builders stated they had confidence in dealers who had an interest in community affairs, who were respected for their abilities as businessmen and for having the engineering and practical background necessary to interpret the latest developments of their industry to meet individual problems when variations occur on different applications.

These people also said they liked to see evidence — both actual installations and descriptive literature — which would give them a clear picture of equipment recommended by the dealer. One builder told us he liked the appearance of a particular new model baseboard diffuser and upon reading the published information he felt it would serve his purpose well, but he wanted to talk with someone who had used this type of air distribution before he agreed to install it in a housing project he was constructing. However, when he asked to be shown a similar installation, none of the dealers with whom he had done business did so. He said that if no one was using this particular model, he did not want to be the first; but if a dealer had installed a mock-up of such a system in his showroom and invited him to see it in operation, he probably would have ordered it for his project.

We left this meeting with the feeling that home builders are the same as any other prospects of the warm air heating-residental air conditioning dealer — and need to be sold on the same basis.

Porcelain E

By G. E. Spencer
Mgr., Architectural Div.
Ingram-Richardson Mfg. Co.

ALUMINUM MOLDING stops are attached by screws around the four edges

Enamel Panels

Answer Call for Color

. . . in modern building design. Application of the panels in the new Ford building establishes the curtain wall medium as a leader in major architectural work

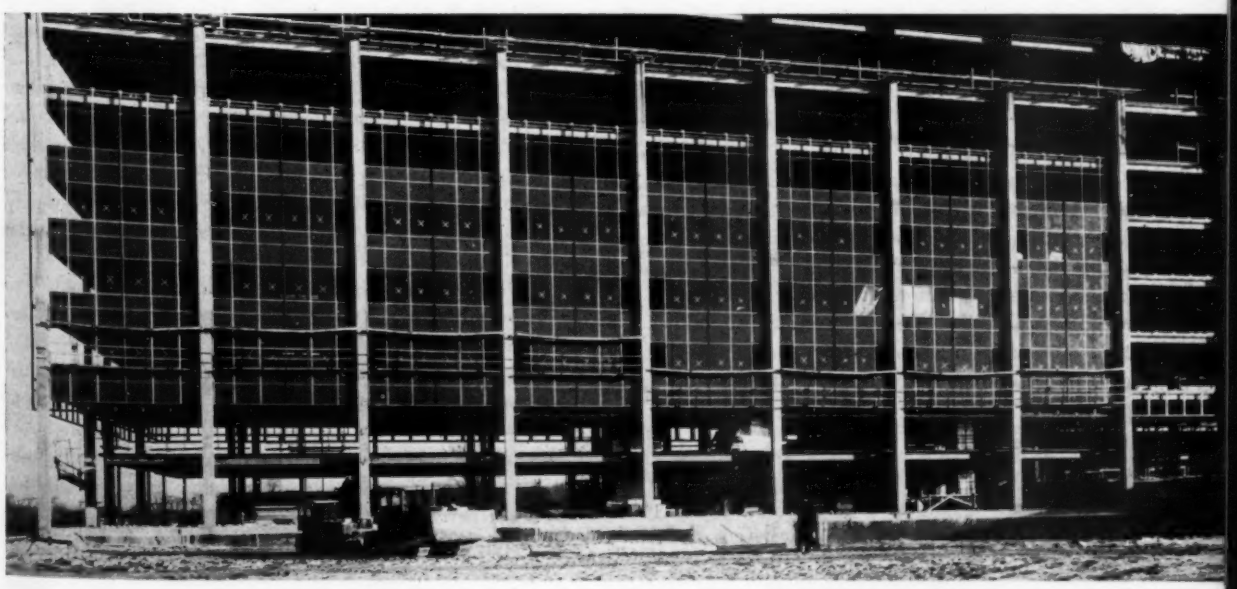
MODERN BUILDING design frequently calls for the use of color and ornamental trim. Curtain wall panels and aluminum or stainless steel molding meet these requirements very nicely. Besides being decorative, this type of construction is less expensive than conventional masonry used to achieve similar patterns in buildings. One building recently constructed with colored curtain wall panels is the Ford Motor Co. central staff office building at Dearborn, Mich. This building utilizes porcelain enamel panels trimmed with narrow aluminum mullions.

Smaller Jobs Provide Experience

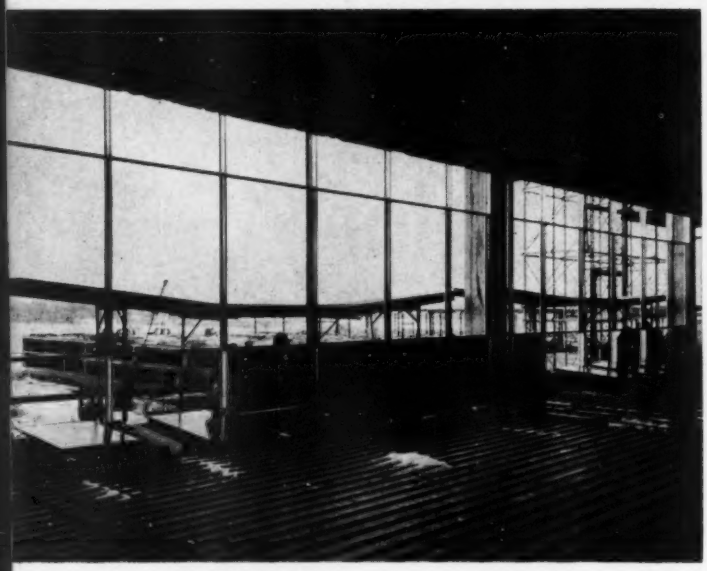
Porcelain enameled wall panels have been used successfully for years as exterior facing in the construction of gasoline service stations. The experience thus obtained has been very helpful in the development of panels suitable for use on larger structures such as the 12 story Ford building, where 90,000 sq ft of panels were used.

The fabrication of an enamel curtain wall panel is an interesting process for a sheet metal man. First, the 16 gage sheet is trimmed with power shears and notched in a form set for the particular size panel being made. Next, the sheet is shaped at the power brake by two men. A rectangular panel shape is used for this job. The edges of the panel are made flat with the ends turned in to form a locking inner lip.

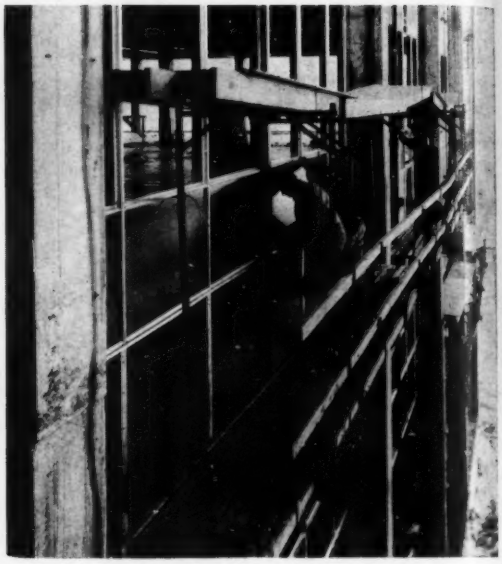
The third step in the fabrication of a panel is the welding of the corners, grinding and buffing so that no rough edges are exposed. Fourth is the cleaning process, in which the panel is dipped alternately in acid and hot water baths, seven in all. The last



TAKING SHAPE with curtain wall panels being set in place, new Ford office building will be a durable landmark in color



PANELS ARE POSITIONED on the floor near framing for easy erection from outside



THREE MAN CREW installs panels with maximum efficiency. Note use of scaffold and roof protection for workers

bath leaves the metal free from dirt, grease and other contaminants.

Color Is Deep Set

After the hot baths, the face of the panel is sprayed with a base material containing frit particles; after drying, the panel is fired in an oven. A second coat of the base material containing the desired color pigment is sprayed on the panel. The next process is a trip through an electric furnace at a temperature of approximately 1520 F. Upon emerging from the fusing furnace, the exterior surface of the panel has a depth of hue that other coloring processes are unable to duplicate. The color of the enameled panels for the Ford building is a dark blue-green. More than 6500 panels are being used.

Following the enameling process, a ¼ in. thick laminated honeycombed aluminum mesh is placed against the inner side of the exterior surface of the panel; next, a 24 gage galvanized intermediate sheet is put in place to hold the aluminum mesh in position; then a 2 in. layer of cellular glass insulation and finally a 20 gage galvanized back pan that has been painted for additional protection against deterioration is added. The largest panel size is 4 ft 6¼ in. × 3 ft 9½ in. × 2½ in.; its weight is 120 lb. Smaller panels are used to meet the building specifications.

After the panel has been assembled, a "U" shaped neoprene gasket is stretched around the four edges, overlapping about ½ in. on the panel front and back. This gasket forms a weatherproof joint when the panel is fitted into its place on the building frame.

Each panel is placed in a cardboard carton to prevent damage to the panel surface. From 200 to 500 panels at a time are shipped by truck direct from the factory to the job site. The panels are then delivered to the floor where they will be used and arranged along the structure's edge for a minimum of handling.

Three Man Crew Streamlines Installation

In the Ford building, all panel erection is done from scaffolds similar to those used by painters when working on the exterior of a building. The erection crew consists of a minimum of two men, although a three man crew is generally used. When the three man crew is used, two men lift the panel into place, then one worker holds the panel against the building frame while the second man places the moulding stops and bolts. The bolts are tightened by hand just enough to hold the panel in place, then the two men move on to the next position. The third man follows closely behind the two man placement crew and secures the moulding stops in their permanent positions.

When the moulding is bolted into place, it pulls into the neoprene gasket around the panel, forming a weatherproof joint.

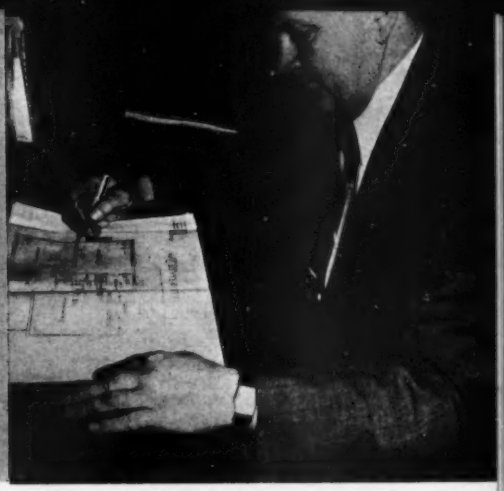
An aluminum cover plate is attached to a vertical aluminum frame member covering the moulding stops to present an attractive appearance to the exterior wall.

Extra care is given the handling of each panel from the time it leaves the furnace until it is erected, because there is no way to repair a panel in the field.

Architects for the Ford central office building are Skidmore, Owings & Merrill, New York. General contractor is Bryant & Detwiler, Detroit. Panel fabricator, Ingram-Richardson Mfg. Co., Beaver Falls, Pa.

Sizing, Locating, Rating Methods for

Return Air Systems in Year 'Round Installations



CAREFUL PLANNING and proper use of available data eliminate trouble spots in the return side of the air conditioning system

By Clarence L. Grandstaff
Chief Applications Engineer
C. A. Olsen Mfg. Co.

Tested procedures based on supply cfm provide a yardstick for the dealer to use in installing adequate return systems

HAVING CONSIDERED the supply system for year 'round air conditioning last month, we now turn to a step-by-step outline for design of the return system. The cfm methods described here and in last month's article are now being applied by the author's company and have been approved for use by the Manual 9 committee of the National Warm Air Heating and Air Conditioning Association.

NWAHACA Manual 9 will be required for reference in designing return air systems. Work sheet 9C will also be needed to work out some of the problems. Form 9HC has been developed by the author and his associates for use with NWAHACA Manual 9 in calculating supply and return requirements for both heating and cooling.

The return air side of a heating system, either gravity or forced air, has been sadly neglected by some installing contractors. When trouble jobs are encountered the difficulties are often traced to an inadequate return system.

On many installations it has been found that the crossbridging has not been removed when joist spaces are used as ducts.

In other installations which do have adequate ducts, restrictions have occurred where the opening from the grille to the joist is too small or the area is reduced where the joists pass over a beam. Furniture and drapes over returns are common sources of reduced air volumes. It is impossible for the blower to deliver air on the supply side if the return side is so restricted that proper flow cannot be obtained. Correct sizing in the return system is just as important as it is in the supply system.

When returns are installed in each room the return air system should be sized for the cfm supplied to that room.

When perimeter systems are installed, central returns may be used for a group of rooms. We suggest, however, that no more than 60,000 Btuh be used for any one return.

Central returns must serve all rooms without causing excessive air flow through the living area.

We believe central returns should be near or in the ceiling for year 'round installations.

High wall or ceiling supply registers with low wall central returns usually are not recommended for basementless structures where the design temperature difference is 50 deg or more; in colder areas, such systems often produce cold drafts across the floor and at the perimeter.

Where the design temperature difference is 50 to 60 deg high wall supplies and low returns from each room of a basementless structure may give satisfactory cooling results. However, we are convinced the comfort level will not be as good during the heating cycle with a high wall or ceiling outlet system as with a perimeter system.

Upstairs Returns Called For

It is difficult to keep the cooled air in the rooms on the top floor of two story residences, because warm air rises and cold air falls during the heating season just as it does during the cooling season.

The cooled air will fall to the lower levels and the warmer air in the lower rooms will rise upstairs. Therefore, it becomes almost a necessity to have return air intakes in each upper floor room to condition the room properly. Doors must also be kept closed.

As an alternative, and this too requires closed doors, a large central return may be installed upstairs, using either a high side wall or ceiling grille connected to a duct which could pass through closets to the basement where it would be connected to the return air system.

Form 9HC March 3, 1955

WORK SHEET FOR HEATING & COOLING

SUPPLY — BRANCH, STACK, and REGISTER SIZING

LINE	ITEM	REFERENCE	1		2		3		
1	Outlet No.	From Plan	1		2		3		
2	Room Use	From Work Sheet 9A and 11	Living		Living		Living		D.
3	Run Use		HEAT	COOL	HEAT	COOL	HEAT	COOL	HEAT
4	1000—BTU per Hr. Room Total	Line 14 on Work Sheet 9A Line 16 on Work Sheet 11	12.0	9.3					3.
5	1000—BTU per Hr. Per Outlet	Line 4 divided by No. of Outlets	6.0	3.1	6.0	3.1	—	3.1	3.0
6	Actual Duct Length in Ft. Horizontal and Vertical	Measure from Plan	6'		13'		—	14'	25'
7	Design Bonnet Temp. for Heating	Table A and Line 6 Use 130°	130		130		—		
8	CFM per 1000—BTU	Heating Table A and Lines 6 and 7 Cooling Table Ac and Line 6	16.4	30	16.4	31	—	31	1
9	CFM for Each Outlet	Lines 5 Times Line 8	98	93	98	96	—	96	5
10	Bonnet Pressure	Select from Main Tr. having Max. Bonnet Press. Line 11*	.15	.15					
11	Equiv. Length (Fittings Only)	Fig. 1 and Lines 23 and 24	75'		70'		100'		
12	Total Equiv. Length	Line 6 Plus Line 11	81'		83'		114'		
13	†Register Deflection in Degrees	Determine from Plan							
14	†Throw from Register in Ft.	Measure from Plan							
15	†Register Free Area	See Manufacturers Data							
16	Register Pressure Loss	See Manufacturers Data	.03		.03			.02	
17	Actual Duct Loss (Total)	Line 10 Minus Line 16	.12		.12			.13	
18	Loss per 100 ft.	Table D and Lines 12 and 17	.15		.15			.12	
19	Duct Size (Round)	Table E and Line 9 and 18	6"		6"			6"	
20	Stack Size	Table F and Line 19						3¼x10	
21	Register Size	Table G and Line 15 and 20	2¼x14		2¼x14			10x6	
22	Register Location		Floor		Floor			High	

23	Total CFM any ONE MAIN Trunk	800 to 1000	1000 to 1200	1200 to 1800	1800 to 2400	2400 to 3500	3500 to 5000	5000 to 7500	7500 to 10000	10000 to 12000	12000 to 14000	TRUNK LINE
24	Suggested Bonnet Press.	.10	.10	.10	.13	.14	.15	.25	.375	.50	.75	TRUNK LINE II
25	Approx. Equiv. Length per Elbow (Trunk Line Class 2B)	15	20	25	30	35	40	40	40	50	50	Equivalent leng

*If this maximum value of bonnet pressure (see line 10 under "reference") is not high enough to take care of maximum loss on lines 16 and 17 or results in the use of too large main trunk lines on big jobs, then use higher bonnet pressure

†Used only for high wall and ceiling outlets

RETURN — BRANCH, STACK, and INTAKE SIZING

26	Inlet No.	From Plan	1R		2R		3R					
27	Room Use	From Work Sheet	All		Basement							
28	Actual Duct Length Horizontal and Vertical	Measure from Plan	27'		on duct							
29	Equiv. Length (Fittings Only)	See Fig. 1 (Include Intake)	85'									
30	Total Equiv. Length	Line 28 Plus Line 29	112'									
31	CFM for Each Intake	See Line 9	743	760	276							
32	Suction Pressure (Total)			.05	.05"							
33	Loss per 100 Ft.	Table D and Lines 30 and 32		.05								
34	Duct Size (Round)	Table E and Lines 31 and 33		14.5"								
35	Stack Size	Table F and Line 34		24"x8"								
36	Intake Free Area	Line 31 x.30		228	47							
37	Intake Size	See Manufacturers Data		30"x10"	14"x6"							

Grilles placed over the bedroom doors would allow the air to flow from the rooms back to the central grille. The free area of such transfer grilles can be obtained by multiplying the room cfm by 0.40 in. per cfm.

The return duct sizing is accomplished by using the portion at the bottom of form 9HC. (Work sheet 9HC for sizing both supply and return air systems is reproduced through the third column above.

The rooms are listed separately on line 27 in the same manner as for the supply side, when individual room

returns are to be installed.

When central returns are to be used, designate which rooms are grouped together. The actual length (line 28), equivalent length (line 29) and total equivalent length (line 30) are filled in the same as for the supply side of the system, which was discussed in June Artisan, with one exception which involves use of an equivalent length value for the return air grille rather than a pressure loss value as used on the supply side — see Manual 9.

On line 31 of work sheet 9HC, record the cfm to be handled. It is important to pick up the greatest volume from line 9 when installing individual returns.

Central returns should be sized for the greatest total cfm of either the heating or cooling system. Add together the cooling cfm from line 9, then add the heating cfm from line 9 and use the largest value.

Determine Suction Pressure

Suction pressure, line 32, is the pressure difference between the unit total external static pressure rating and that used for the supply system. Using a unit rated at 0.20 in. external static pressure and a supply system designed for 0.15 in. static pressure, the suction pressure would then be 0.05 in. (0.20 − 0.15 in.).

The loss per 100 ft would be determined as outlined for the supply side using the total equivalent length and table D, NWAHACA Manual 9.

With the loss per 100 ft from line 33 and the cfm from line 31, refer to table E for the round pipe size required.

Stack sizes and rectangular duct sizes that are equivalent to the round pipe required are obtained from table F.

Intake free areas can be determined for 500 fpm velocity by multiplying the required cfm by 0.30. This free area can then be used for grille sizing.

Table H may also be used for grille sizing.

Many contractors undersize the grilles for single returns because they feel the appearance of a large grille may be objectionable. Actually, the air noise created by undersized grilles can be even more objectionable.

Smaller return grilles of improved design may be the answer. A number of manufacturers provide air foil louvers which allow greater velocities with low resistance and noise levels. With such grilles, velocities as high as 700 fpm may often be used and the free area can be obtained by multiplying the cfm by 0.21.

After branch duct sizes have been found, the sizes of the trunk duct are determined through use of the company's form 9HC and NWAHACA form 9C. Work sheet 9C for sizing supply and return air trunk ducts provides space for numbering outlets, inlets and duct sections and columns for listing branch and main trunk cfm, friction loss per 100 ft, round pipe diameters and their rectangular duct equivalents.

Number each outlet or inlet and letter each section of trunk duct. Outlets or inlets carry numbers as given in lines 1 and 26 of work sheet 9HC. Branch trunks and main trunk duct sections may be designated with capital letters, main trunks from the plenum with Roman numerals.

Examples given . . .

. . . in this discussion and on work sheet 9HC apply to a sample house which is rectangular (26½ × 41½ ft) with basement and a carport on the north side. The kitchen, measuring about 8 × 12 ft, has eastern exposure as do the 8½ × 11½ ft dining area, 7 × 7½ ft bath and bedroom no. 2 which is about 11 × 11 ft and also has southern exposure. Bedroom no. 1, 9 × 13 ft, has windows on the south and west sides. A den measuring about 9½ × 10 ft has one window on the west side. The 13 × 18 ft living room has a large picture window also facing west. Each room contains one floor diffuser with the exception of the living room which has two floor diffusers against the outside wall and a high wall register located in the partition facing the wall.

Consider the section of the trunk line which is farthest from the furnace bonnet (or return plenum) as the *beginning* of the trunk duct.

In the left column of work sheet 9C list each outlet or inlet number and each trunk designation, starting with the extreme branch and working in toward the bonnet or plenum. Where a branch trunk joins a main trunk duct, start in each case at the extreme end of the branch trunk and work in toward the junction.

In column A of work sheet 9C enter the cfm handled by each outlet or inlet. These values can be copied from work sheet 9HC, lines 9 and 31.

In column B of work sheet 9C, enter the cfm handled by each section of the branch trunk. These figures will be equal to the sum of all cfm being supplied to the outlet by that branch.

In column C, enter cumulative cfm of the main trunk as additional outlets and branch trunks are added.

Tables Provide Equivalent Sizes

In column D of 9C, enter the friction loss per 100 ft of duct for each individual stack or branch duct. These statistics can be copied from work sheet 9HC, lines 18 and 33. Then enter the friction loss per 100 ft of main or branch trunk duct by taking the smallest value for friction loss per 100 ft for any ducts meeting at a junction. For example, if a branch with a friction loss of 0.07 in. per 100 ft joins another having a loss of 0.14 in. per 100 ft, the trunk duct serving both ducts should have a loss of 0.07 in. per 100 ft.

In column E of work sheet 9C, enter the sizes of the branch ducts listed in lines 19 and 34 of work sheet 9HC; then enter sizes of the round trunk ducts, using table E and column D with columns B or C.

The rectangular sizes equivalent to the round pipes can be obtained from table F. These sizes should be inserted in columns F, G or H.

Sheet Metal Contractor's

Promotion Formula:

7 Steps to New Business With Phone Book Ads

Fitting the components together to produce an advertisement which stands out from others on the page requires careful planning, but it pays off in business you might not reach through other media

By Ernest W. Fair

FEW BUSINESSMEN will argue against the fact that telephone listings and advertising bring results. Many sheet metal contractors with small advertising budgets have found that a display ad in the yellow pages of the local phone book is a most effective medium for pulling new business.

Conditioned by the continuous promotion of the classified directory by the telephone companies, the customer who has not been exposed to word-of-mouth recommendation or to other forms of promotion at the time he needs work done will usually turn to the yellow pages for help in selecting someone to do his sheet metal work.

As he looks he finds not one but a number of shops listed and unless one of the shops rings a bell in his memory, he will probably be influenced by the most compelling advertising.

Making his advertising different and unusual is therefore a point of considerable importance to the contractor. A number of essential points combine to produce eye-catching ads which stand out among others and tell the reader what he wants to know about the shop. Here are a few techniques which have been tested by contractors and found effective:

1. Make the layout different. The illustration shows the approach some Denver shop owners used. Angerman Heating, Inc. does it with a top-of-the-page illustration of an artisan installing a gutter. W. H. Dawson pictures a big drying kiln while Broadway Sheet Metal Works uses a layout of reversed type and eye-pulling design to focus attention on its particular advertisement, as does Monarch Sheet Metal and South Denver Sheet Metal & Furnace. The others are placed to contrast with the reverse ads. Illustrations — photographs, cartoons, drawings and decorations — are good media for arresting the reader's attention. And don't overlook white space. It's often as powerful a puller as the most dramatic illustration or the boldest type.

2. Play up your specialty. Opportunity for specialty business exists in every community. Plains Sheet Metal & Roofing Co., Amarillo, Tex., does it with a list in the center of the ad under the title, "Specializing In..." with each item accented by a large printer's ornament. Items include air conditioning, heating, ventilation, skylights, stainless steel kitchen equipment, metal roofing and others.

3. Provide emergency numbers. Some of the contractor's best customers will be those who need his services quickly or have only nights and holidays free to contact him. Many shops provide night phone listings, or as White Sheet Metal Works, Scottsbluff, Nebr. does it, list "residence phone" directly beneath the business number.

4. "Blow your own horn" in the ad. If you don't, certainly nobody else will. The ad should play up the merits of the shop to make it the logical choice. This effect should be achieved with the fewest possible words and with tact and good taste. McKnight's, Hobbs, N. M., advertises, "If it's made of metal, we make it."

5. Make the number easy to read. All other features being equal, the prospect is very likely to call the first number he finds. The reader won't copy it down and take it to the telephone—he'll probably call the number he can read 3 or 4 ft away while he's dialing. OK Sheet Metal Co., Waco, Tex. does an effective job with the large number centered in the ad with plenty of white space around it.

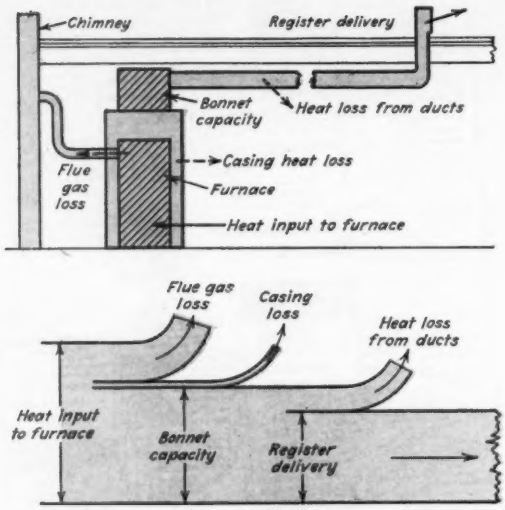
6. Say something about price. That's a big item with the prospect, and he may have apprehensions about a costly job. One ad on the page which mentions something about reasonable prices is very likely to win his vote hands down. Naturally, because of the nature of the work, it is virtually impossible for a sheet metal shop to post definite prices, especially when the ad must

EFFECTIVE USE of type, illustrations, white space and layout techniques produces selling ads in Denver classified directory

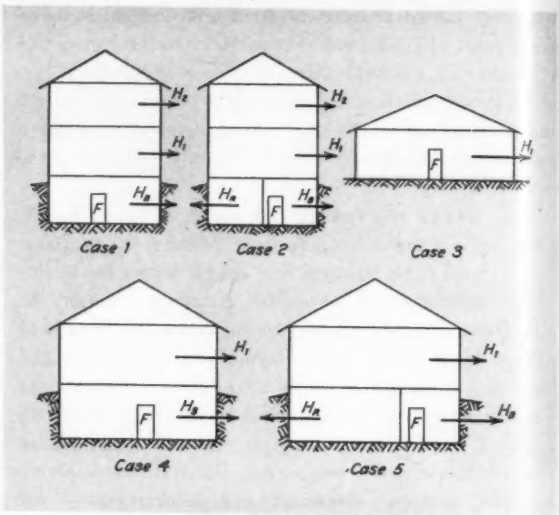
stand for several months; but a gesture to show the reader that the contractor is conscious of his customers' budgets will do a lot for business. Naturally, in this business we don't want to go overboard advertising "cheap" work, and something should be said about quality to show that work isn't based on price alone. El Paso Sheet Metal Works, El Paso, Tex., hits both these elements with six words: "Highest Quality Work at Reasonable Prices"; Stewart Sheet Metal Co., Tulsa, Okla., shortens it even more without losing punch with a headline which heralds "Better Workmanship at Lower Cost."

7. Spot the shop. Many shops publish pictures of their plants in the ads which not only help the reader find the shop but also imprint in his memory the name and number of a shop he has passed or will pass in his daily routine. If the budget doesn't permit use of illustrations, a single line of type, such as "two doors from the post office" help locate the establishment. In larger cities, some contractors identify themselves with respect to location by spotting the words "South Side" or district name such as "Beverly Hills" in a conspicuous place in the ad, usually boxed by rules and surrounded by plenty of white space.

All these points are necessary to putting together an effective telephone directory advertisement but none should supersede the big three components — name of the shop, its address, and telephone number — all of which should be in bold face type or otherwise distinguished, and not buried in an effort to try to get too much information in the space purchased.



1 DEFINITION OF TERMS commonly referred to in furnace ratings. Bottom half shows how flue gas loss, casing heat loss and duct heat loss divert heat away from registers



2 EXAMPLES ILLUSTRATE inconsistencies in making heat loss calculations

Simple Tests Rate

Burner Input for Heating Jobs

Field measurements for determining adequacy of the burner for the specific job are supplemented by additional information on selection of furnace size according to heat loss

By S. Konzo and H. D. Bareither
University of Illinois

Last month we presented . . .
. . . a discussion of measurements to be made of blower operation which would enable a heating dealer to determine if a given heating system was conforming to the principles of continuous air circulation. It was shown, for example, that the time of blower operations could be plotted on a curve and the position of the plotted point would indicate whether corrective measures were required.

A FEW SIMPLE measurements made by a heating dealer can determine whether or not the burner input rate is adequate. The only instrument required is an ordinary pocket watch, and the only aid needed is the chart shown on these pages.

A few comments concerning the selection of furnace

size are in order, since the relationship between the design heat loss of a building and the required furnace capacity is not firmly established. That is, there is no universal agreement that when the design heat loss is say 100,000 Btuh the furnace capacity for the job should be a certain percentage larger in magnitude.

Before proceeding we should define some terms commonly referred to in furnace ratings. Fig. 1 shows the major items referring to the furnace:

a) Heat input to the furnace.

b) Bonnet capacity.

c) Register delivery.

As shown by the diagrams in the lower portion of Fig. 1 the flue gas loss, the casing heat loss, and the duct heat loss all divert heat away from the registers.

Duct Heat Loss Can't Be Fixed Value

In gas fired equipment, in which the furnace is tested and rated by the American Gas Association laboratories, the bonnet capacity is 80 percent of the heat input to the furnace. Since the length and size of ducts connected to the furnace are not the same for different installations, the heat loss from the ducts cannot be a single fixed value for all jobs. Nevertheless, the National Warm Air Heating and Air Conditioning Association has assumed that a heat loss of 15 percent for the ducts between the bonnet and registers is a reasonable value for small homes. On this basis the register delivery is 85 percent of the bonnet capacity. Hence, a gas fired furnace having an input rating of 120,000 Btuh will have a bonnet capacity of 0.8 (120,000) or 96,000 Btuh, and a register delivery rating of 0.85 (96,000) or 81,600 Btuh. It should be emphasized that the official rating, as determined by AGA applies only to the heat input and the bonnet capacity. The value for the register delivery is an estimate by the manufacturer based upon the recommendations of the National Warm Air Heating and Air Conditioning Association.

Selecting a Furnace for a Given Job

Our next step is to see how these ratings apply to specific jobs. For this purpose the diagrams in Fig. 2 are shown, for which the following abbreviations have been used:

H_1 = design heat loss for first story rooms only.

H_2 = design heat loss for second story rooms only.

H_b = design heat loss for the basement only, but not including recreation rooms or other rooms to be maintained at a definite temperature.

H_r = design heat loss of basement recreation room, hobby room, study, etc. located in the basement and to be maintained at a definite temperature.

F = Furnace and burner.

Case 1 is a two story house with basement. It has been common practice to consider the heat losses only for the upper stories and to ignore that for the basement. The heat loss so determined was then balanced by the register delivery. In other words, $H_1 + H_2 =$ register delivery.

Case 2 is a two story house with basement recreation room. The heat loss usually considered was the sum of heat losses for the upper stories as well as that for the recreation room. This sum was then balanced by the register delivery. In other words, $H_1 + H_2 + H_r =$ register delivery. Note that the heat loss from the remainder of the basement was ignored.

Case 3 is a one story house without basement. The heat loss for this type of structure included the heat loss through the floor, both for slab floors and floors over a crawl space. Since the furnace was located in the occupied space and any heat loss from the ducts escaped into the occupied space, it was common practice to specify that the bonnet capacity was to offset the heat loss. In other words, $H_1 =$ bonnet capacity. As will be noted later the heat loss from the ducts would not escape into the living quarters if the ducts were located in the attic. In this special case, a modification of the rule was sometimes made.

Case 4 is a one story house with basement. If the furnace is located in the basement, then this case is substantially the same as Case 1.

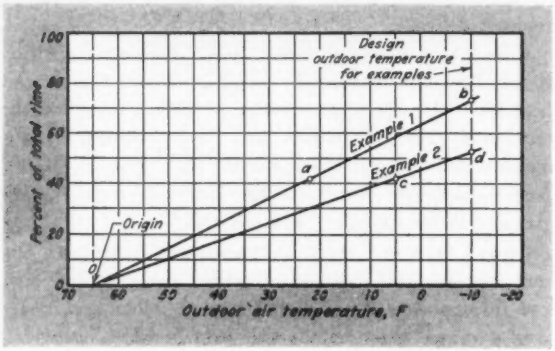
Case 5 is a one story house with a recreation room in the basement. If the furnace is located in the basement, then this case is substantially the same as for Case 2.

Define Basement First

The trouble with the foregoing practices is that sometimes a space in the basement was considered in the heat loss calculations and sometimes it was ignored. It was left to the heating dealer to decide whether the lowest story in a tri-level house was a basement or a recreation room. If the space was a basement, then he could ignore the heat loss from the space. If it was to be regarded as a recreation room, the heat

A NEW APPROACH

. . . to modern heating and cooling techniques upon which future improvements in heating systems should be based is presented through complete analysis of the known factors and practices now observed by progressive warm air heating dealers. The authors propose to show how the information now on hand can be developed to provide equipment and installation techniques superior to present practices. Some of the subjects yet to be covered are adjustment of fuel input and combustion efficiency, venting of flue gases, noise, temperature control and distribution, temperature differentials and drafts.



3 PLOTTING OF DATA on simple graph determines adequacy of input rate

loss for the space became of importance. Furthermore, the furnace size was selected sometimes from the standpoint of bonnet capacity and sometimes from the standpoint of register delivery. It is our opinion that things need not be so complicated.

From the standpoint of the furnace, a given Btu which gets into the house is a good Btu whether it is delivered into the living room or into the basement. As far as the furnace is concerned the basement is just as much living space as the living room itself. Only the whim of the occupant determines that one space is for living quarters and another space is not. In one case a space is considered simply as basement area, while in the next house a similar space is called a recreation room. As a matter of fact, in many instances a basement space is transformed into a den or hobby room after the house has been lived in for some years. If this transformation is made, the original design heat loss of the house suddenly increases after a change has been made in the designation of the space, and the existing furnace may suddenly become too small, according to the design heat loss requirements. This situation does not seem to make sense from the standpoint of the heating dealer whose job it is to produce a heating installation which will adequately serve a home.

Bonnet Capacity Must Equal 'Total' Heat Loss

We probably would not have such inconsistencies if we followed two simple rules:

1) In calculating the design heat loss for a building, take into account *all* spaces, including the basement.

2) After determining the total heat loss, including all basement spaces, select a furnace which has a bonnet capacity at least equal to the design heat loss.

If we followed these two simple rules, the cases 1 through 5 in Fig. 2 would be handled in exactly the same manner. The argument might be raised that these two rules call for a calculation of the basement heat loss, which is not easy.

As indicated previously the only place where our rules might require modification is where the furnace is located in the attic, in which case the vagrant heat losses from the furnace casing and the attic ducts do not enter the living quarters.

Measuring the Burner in the Field

The preceding discussion has a bearing on the kind of information we can hope to obtain from a field test. In these short tests we shall consider the furnace and burner as a heat emitting device in which no attempt is made to determine what proportion of the heat appears at the bonnet and what part at the registers. We shall assume that all heat released in the house becomes useful heat, regardless of whether such heat comes from registers, vent pipe, chimney or the casing. Hence, our information will not deal with register delivery or bonnet capacity, but with the way in which the burner operates in typically cool weather.

If we can determine the percentage of time the burner is operating on any given day, it will be possible to plot the information on a simple graph such as the one shown in Fig. 3 and determine whether the input rate is sufficient or inadequate. The steps in the process are as follows:

a) Select a time of day when the furnace is operating regularly and cyclically. Avoid periods following changes in thermostat setting, of intense sun load, of large cooking loads, etc. Usually a night time period during moderately cold weather is preferred over a daytime period. The outdoor air temperature for this short period should be noted.

b) Observe and jot down the times when the burner has started and when it has stopped through at least two cycles of burner operation.

c) Determine the total time of burner operation as well as the total time of the *off* periods. From these values you can calculate the percentage of the total time the burner was operating.

d) Plot the point on Fig. 3 (Percentage is plotted against outdoor air temperature.)

e) Draw a straight line from point O through the observed point. Extend the straight line until it intersects the vertical line representing the design outdoor temperature for the region.

TABLE 1—EXAMPLE OF readings and plottings shows how data was recorded and plotted on Fig. 3.

	Hr:min:sec	On period	Off period
Burner on	9:25:10	—	—
Burner off	9:30:20	5:10	—
Burner on	9:38:40	—	8:20
Burner off	9:44:50	6:10	—
Burner on	9:52:20	—	7:30
		11:20	15:50

Total time 27:10
Burner operation as percent of total time ..... 42 percent
Outdoor air temperature at time of test ..... 22 F
Design weather for the locality ..... −10 F

The data for the example is shown in Fig. 3. Point A is the observed percentage of time for the 22 F outdoor temperature. A straight line is drawn from point O through point A and extended to point B, which is for −10 F outdoor design temperature. Point B shows that if the outdoor temperature should reach −10 F, and if the furnace should operate without any change in efficiency, the burner would operate about 74 percent of the time. In other words, the reserve capacity of the furnace and burner is 100 − 74, or about 26 percent, which is more than adequate. A slight reduction in fuel input might be in order.

Suppose that the same data on burner operations were obtained when the outdoor air temperature at the time of test was +5 F. Assume that the outdoor design temperature for the locality was still −10 F. The plotting of the observed value is shown as point C in Fig. 3. The straight line drawn from the origin O through C intersects the −10 F outdoor temperature line at point D, corresponding to a burner operation of 53 percent. This is equivalent to a reserve capacity of 47 percent, which is too large, and indicates that the burner input rate can be reduced considerably. Incidentally, too large a reserve capacity is usually accompanied by poorer control of room air temperatures and decreased fuel economy.

The data for the proposed method of determining the burner operating times can be obtained at the same time as that for the blower operating times discussed last month.

Unlike the data for blower operation, the data for burner operation can be and should be obtained in extremely cold weather, when the blower is operating continuously and the burner is cycling frequently.

PROPOSED RATING FOR BURNER OPERATION

CLASS A Under design weather conditions the burner will operate from 85 to 95 percent of the time.

CLASS B Under design weather conditions, the burner will operate 95 to 100 percent of the time, or 80 to 85 percent of the time.

CLASS C Under design weather conditions, the burner will operate from 65 to 80 percent of the time.

CLASS D Under design weather conditions, the burner will operate 100 percent of the time without meeting the heat demand, or less than 65 percent of the time.

If the evidence from Fig. 3 shows an excessive input rate, some reduction below the rated input is possible in many instances. In general, manufacturers of gas fired furnaces do not permit input reductions to exceed about 20 percent. Any reduction in input larger than 20 percent might lead to ignition difficulties. With oil fired equipment an 0.75 gph nozzle is about as small as is practical with most gun type burners.

The length of the burner operating time may yield information of interest to the dealer. Usually, burner operating times of less than 2 min per cycle are not recommended, because of the possibility of poor combustion. On the other hand, excessively long *on* periods followed by long *off* periods are not good.

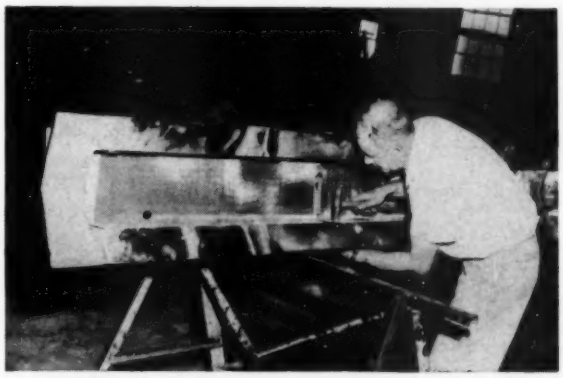
Use Ridge Ventilators for Summer Cottages

THE BUILDERS of summer cottages located along the seacoast of Georgia have always been faced with the problem of providing a building that will be durable and yet require a minimum amount of attention from the homeowner because usually cottages of this type are occupied for comparatively short periods and the purchaser of such a building intends to spend most of his time relaxing rather than maintaining his cottage.

The purchasers also want maximum comfort in their cottages; thus, numerous windows are installed to permit sea breezes to pass freely through the building.

One of the sources of internal heat gain has been the roof, which must be securely fastened to the building but also must permit free air circulation immediately beneath the ridge and through the eaves. The most durable and effective means of venting such areas has proven to be the ridge ventilator.

A ventilator running the entire length of the ridge has been developed by Cecil C. Pacetti & Sons, sheet metal contractors of Savannah. The ventilator is fabricated from 16 oz cold rolled copper. All joints are riveted and soldered. Every ventilator has a copper screen built into the main opening to keep insects and birds from entering the attic space. Mr. Pacetti reports that more of his ventilators are being sold each year because they require no maintenance and are proving to weather the ocean storms well.



COPPER RIDGE ventilator is riveted by J. N. Wiggins after fastening the screens in place

Cooling Tower | Happy Medium for Heat Disposal?

Combining the advantages — and limitations — of both air and water for getting rid of heat, the cooling tower is a most useful member of the air conditioning family. It should, of course, be properly rated and installed

By S. W. Reid
Air Conditioning Engineer
Gilbert Associates, Inc.

AN AIR conditioning system provides a means whereby heat is transferred from one medium to another. Heat from inside a house which enters the cooling coil is neither swallowed up nor destroyed by the system, it is merely moved. The system might be compared to a pump in a water line. Just as water which enters the pump inlet must leave if there is to be a flow of water so must heat which enters a cooling system leave if there is to be a flow of heat.

A prime factor in the flow of heat is temperature difference. Heat always flows toward the lower temperature; thus, heat from a house can flow to the refrigerant inside a cooling coil because the refrigerating system makes it possible to maintain the refrigerant cooler than the air temperature in the house. By the same token, heat can flow out of the refrigerant inside a condenser coil only if the coil is surrounded by a medium of lower temperature.

Air-Water Combination Expels Heat

Atmospheric air and water are the media most commonly available for absorbing condenser heat. Water alone is being used less and less, partly because of municipal restrictions; air alone has certain limitations which arise from the relatively large air volumes required and other factors such as size, noise and air movement. The combination of water with air in an apparatus called a cooling tower gets heat out of the refrigerant and into the atmosphere without many of the limitations of water or air alone.

Principle is the Same

The cooling tower has a very close first cousin, the evaporative condenser. The operating principle of these two devices is the same, the main difference being in the method by which heat is brought to the unit. In the cooling tower an external water circuit through a remotely located refrigerant condenser brings in the heat. In the evaporative condenser, refrigerant tubing brings the heat directly to the device without any external and intermediate water circuit. Our primary concern this month is with the cooling tower, although many of the remarks will apply also to the evaporative condenser.

The cooling tower transfers heat from water to the atmosphere through the principle of evaporation. To get a relative picture of how much water can be saved by this method consider a refrigerant condenser in a 3 ton air conditioner. Assuming that water is available from a main at 75 F, the use of 4½ gpm through the condenser would be expected to result in a water temperature rise of 20 deg (95 F water leaving). The water in this case would have to be entirely wasted since no means is used for cooling it back to 75 F for reuse.

When a cooling tower is used, water is recirculated between tower and condenser. In the tower, part of the water evaporates and in so doing removes 8746 Btu from the remaining water for each gallon evaporated. On this basis only 0.086 gpm would be lost by evaporation to dissipate the condenser heat from a 3 ton air conditioner.

Two Methods of Heat Removal

The relative water quantities may be seen more clearly in equation form. We start with the assumption that for each ton (200 Btu per min) of cooling done by the cooling coil, 250 Btu per min will have to be removed from the condenser. (The 50 Btu increase is approximate and is introduced into the refrigerant by the compressor). Thus, the condenser on a 3 ton unit must discard $3 \times 250 = 750$ Btu per min. To remove this heat we can either allow water to rise in temperature to absorb it or allow water to evaporate to absorb it. The two methods and respective water quantities are shown below:

gpm = 750 Btu per min/ (1 Btu per lb per deg F × 20 deg rise × 8.33 lb per gal) = 4.5 .....[1]

and

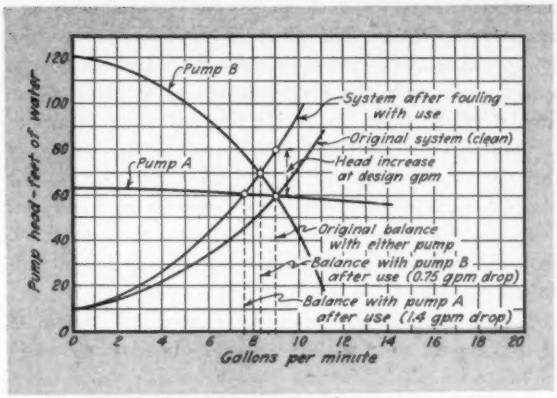
gpm = 750 Btu per min/ (1050 Btu per lb × 8.33 lb per gal) = 0.086 .....[2]

in which equation [1] is the water rise method, and equation [2] is the evaporation (cooling tower) method.

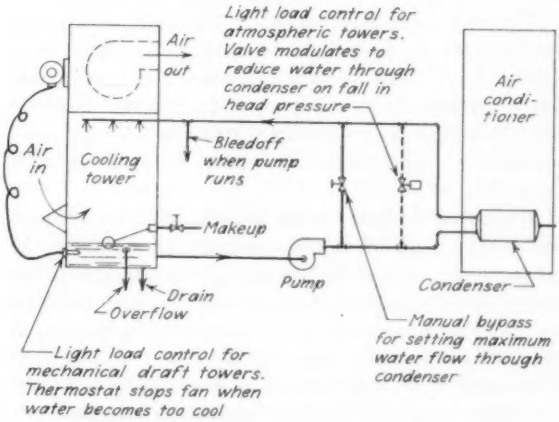
For the comparison shown, the tower cooling method requires, theoretically, less than 2 percent of the new water needed for temperature rise cooling. In addition to the water evaporated (roughly 1 percent of the water circulated through the tower), some water is lost by entrainment in the air stream and other water is deliberately bled off to keep impurity concentration low. In practice, tower water consumption will often be less than 5 and rarely over 10 percent of the water required for straight temperature rise cooling.

Atmospheric or Fan — Which is Best?

The dealer in residential air conditioning is concerned with two general types of cooling towers. One is the at-



1 PUMP SELECTION is based on water quantity and total head. Pump B, with smaller drop in capacity for 20 ft increase in head, is best suited


Light load control for atmospheric towers. Valve modulates to reduce water through condenser on fall in head pressure
Air out
Air in
Cooling tower
Bleedoff when pump runs
Makeup
Drain
Overflow
Pump
Condenser
Air conditioner
Manual bypass for setting maximum water flow through condenser
Light load control for mechanical draft towers. Thermostat stops fan when water becomes too cool

2 COMPLETE WATER CIRCUIT shows valve in bypass line around condenser to adjust flow of water through condenser

A SPECIAL SERIES

. . . of articles pertinent to the residential air conditioning dealer is based on the author's wide experience in the field. The discussions began with consideration of the fundamentals and operating characteristics of residential cooling units, then turned to specific problems, service and installation techniques. Earlier articles have treated such contemporary subjects as types and characteristics of refrigerants, lubrication, charging and trouble shooting procedures, managerial problems, installation techniques, modernization and zoning.

CONTINUING THE APPROACH

. . . we will investigate more of the cooling dealer's problems, analyzing subjects such as liquid and suction line sizing, blower operation in summer and winter, eight different combinations for heating and cooling units and cooling problems in an old two story house.

mospheric tower which depends upon natural wind currents for operation. The other is the forced convection tower with a fan to move air through it. In both towers, warm water from the condenser enters at the top and breaks into particles by passing through spray nozzles or by flowing down over splash or screen decks. Air passes through side louvers and across the water path in the atmospheric tower. In the forced convection tower, air flows against the water stream. A basin at the bottom collects the cooled water and serves as a sump for the circulating pump.

The application for atmospheric towers is limited to areas exposed to prevailing winds. Capacity decreases rapidly when the approaching wind velocity drops below 3 mph, the usual design base.

The atmospheric cooling tower is characteristically long and high and of relatively shallow depth. The leeward side is usually provided with extended louvers to reduce the spray carried beyond the tower area. Because the drift is not actually controllable, even moderate wind velocities may cause considerable nuisance in urban installations except where the drift can be tolerated.

The mechanical draft tower is more flexible in application than the atmospheric tower. It is more compact for a given capacity, can be located indoors if necessary, and has a capacity independent of wind velocity. Moisture drift is no problem in properly designed mechanical draft towers since eliminators are usually available to minimize this factor.

Mechanical draft towers are broadly classified as either forced draft or induced draft depending upon whether the air is *pushed* or *pulled* through. The former has its fan out of the potentially corrosive atmosphere of the leaving air. Fan and motor are more accessible. Because of the relatively low discharge velocity, however, the forced draft tower sometimes recirculates a portion of the moisture laden air which results in a capacity reduction.

Heat Transfer Traced

The heat transfer process which takes place in a cooling tower can be best illustrated by tracing an imaginary drop of water through the tower. As the drop first contacts the cooler air there is a flow of sensible heat from the water to the air because of the temperature difference. There is also a flow of latent heat as part of the drop evaporates. The flow of sensible heat will continue until the temperature of the drop is reduced to the surrounding air DB temperature, but the flow of latent heat, as evidenced by evaporation, will continue as long as the air is not saturated. The temperature of the water falls below the DB air temperature even though sensible heat from the air at this point is flowing into the drop. When the heat lost by evaporation balances the sensible heat gain from the higher air temperature, the water cooling process ceases, and the temperature of the drop is theoretically the same as the WB temperature of the air.

In an actual tower the heat exchange is somewhat more involved due to practical limitations in the amount of air used and upon the means that can be used to obtain intimate air to water contact. The WB temperature of the ambient air is the theoretical low limit to which water can be cooled. Tower performance is in part a measure of how close to this temperature water can be cooled. The differential temperature is known as the *approach* which for most air conditioning installations falls between 5 and 10 deg.

The application of a cooling tower requires not only proper size selection but also correct integration of the tower into the refrigeration system. The latter consideration involves location, pipe sizing, pump selection, bleed off, chemical treatment of the water and electrical control.

Select Towers from Available Ratings

Towers are usually selected directly from manufacturers' ratings. These ratings may be set up in various forms but will always show entering air WB temperature, gpm, cfm, entering and leaving water temperatures and capacity. The capacity may be given in terms of the Btu rejected by the refrigerant condenser. It can be related back to cooling capacity by the use of factors based upon the operating pressures. If these factors do not accompany the rating, they may be found in such standard references as the American Society of Refrigerating Engineers' *Data Book*. A rule of thumb factor is 1.25 (condenser heat equals 1.25 times cooling capacity).

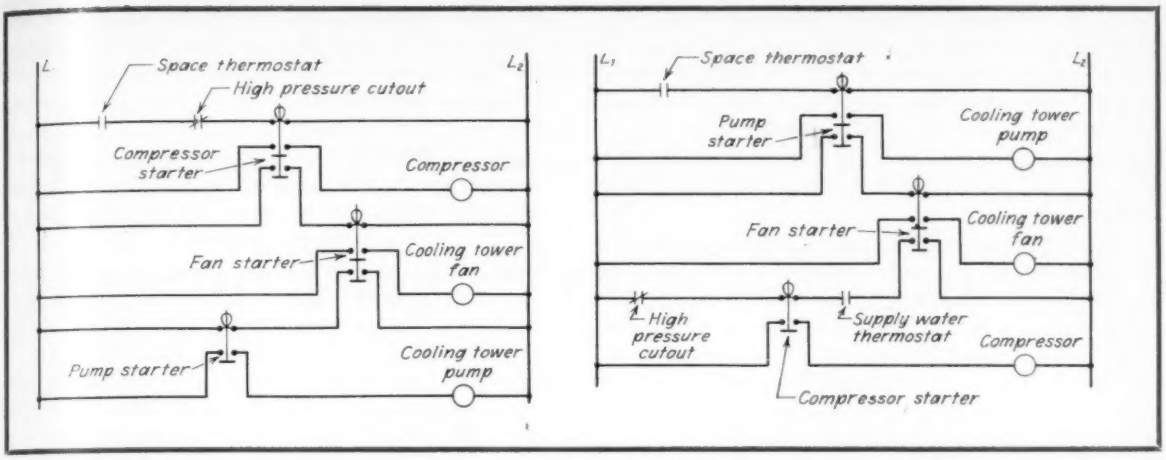
Mechanical cooling towers may be located outdoors or indoors. Outdoor locations must not be so confined that recirculation of the warm, humid air takes place. Some towers require special motor protection when they are exposed to the weather. Towers for outdoor use in urban areas must be selected for relatively quiet operation, and, of course, must not be placed so that air velocities will annoy neighbors.

Indoor locations, especially when they are below grade, require consideration in locating the air intake and exhaust. With these openings at the same elevation there is a definite possibility of recirculation; if practical, they should be in different walls, or at least, the discharge opening should be normally downwind from the intake.

Indoor towers usually should have both intake and discharge openings connected directly to the outside by ductwork. The use of a basement or utility room as a makeup plenum is not recommended, especially when these spaces contain combustion equipment. The negative pressure caused by such operation would be likely to interfere with normal flue action.

Ductwork Should Have Soldered Seams

Ductwork used with indoor towers should have soldered joints and seams. Ducts should be pitched back toward the tower so that carryover and rain water will not lie in them and eventually leak out. Wall openings should have corrosion resistant metal louvers with free areas no less than the duct areas. Louvers should be backed with ¼ in. mesh screen.



3A SIMPLIFIED CONTROL scheme utilizes thermostat which closes on temperature rise, allowing compressor, fan and pump to start in sequence. All motors stop if high pressure cutout opens

3B IMPROVED CONTROL plan uses same principle as simplified method except that if high pressure cutout trips compressor, the tower pump and fan continue to supply cool water to condenser to reduce head pressure rapidly. Supply water thermostat will prevent compressor operation until safe water temperature is reached

Tower water quantities may be estimated conveniently by using the figure 30 gal deg per ton of air conditioning. This figure is derived from the assumed average figure of 250 Btu per min of condenser heat for every 200 Btu per min (1 ton) absorbed in the evaporator. Thus, to absorb 250 Btu per min, 1 gal (8.33 lb) must be raised 30 deg or 2 gal 15 deg or 3 gal 10 deg, etc.

At design conditions the temperature of water leaving a cooling tower is usually higher than that of water available from mains. Therefore, when a tower is used, it is usually necessary to pump more water through the refrigerant condenser if the head pressure and temperature are to be kept in the area of the operating level obtainable with main water. Thus, if main water were available at 75 F and allowed to rise to 95 F in its passage through the condenser, water at the rate of 1½ gpm per ton would be needed (30 gal deg per ton/20 deg range). If cooling tower water were available at 85 F and allowed to rise to 95 F (thereby obtaining the same head pressure as was obtained with the main water) in its passage through the condenser, water at the rate of 3 gpm per ton would be needed (30 gal deg per ton/10 deg range). Unusual conditions require individual consideration, but 3 gpm per ton is widely used.

Determining Pump Head Pressure

With the water quantity established it is possible to determine the head against which the pump must operate. Information is required, then, on the following:

a) pressure drop through the cooling tower,
b) pressure drop through the cooling unit condenser,
c) pressure drop through the piping system,
d) static lift.

Items *a* and *b* above are usually given in the manufacturers' catalogs. If not, they can be determined by test. Item *c* is a matter for the dealer or contractor to determine in designing the system. Pressure loss data for pipe and fittings can be found in many standard references such as the ASHAE *Guide*. Pipe is normally sized for a friction loss between 3 and 7 lb per 100 ft. The static lift (item *d*) is the difference between water level in the system when the pump is not running and the highest point to which water is to be lifted.

When the water quantity and total head are known, the pump may be selected. Because it is important that the design gpm be maintained over the years in spite of a gradual fouling of the water system for one reason or another, a pump selection should be made on the steep part of the characteristic curve.

Fig. 1 illustrates this point. Both pumps will deliver the same water at the design head. However, for a 20 ft increase in head, pump A shows a drop in capacity of about 1.4 gpm whereas pump B shows a drop of only 0.75 gpm. Pump B would then be the preferred selection.

Keep Water Basin Level Above Condenser

The complete water circuit is shown on Fig. 2. Whenever possible, the tower water level should be above the refrigerant condenser. If it is lower than the condenser and long pipe lines are necessary, there is a possibility that on start up the pump will drain the tower sump before water fills the system and returns or before sufficient new water can enter. With this condition there is also the possibility on shutdown that the water draining from the system will flood into the tower faster than the normal overflow pipe can drain it away.

Flooding can be minimized by increasing the overflow pipe size or by adding a second one. Another method

would be to install a larger or additional sump. The latter suggestion can be used also to correct the condition where the pump drains the sump on start up. If there is any doubt about the possibility of these conditions, the problems can be solved by comparing the volume of the system above the sump with the water available in the sump and the volume of the sump above the normal water line.

Some provision should be made for adjusting the flow of water through the condenser after installation. This may be a globe valve in a bypass line around the condenser as shown in Fig. 2. Water flow should be adjusted with the conditioner running for a temperature range through the condenser of about 10 deg unless there is some reason for a different range. Some condensers require a change in piping for tower application.

Salt Deposits Present Problem

As explained previously, cooling tower operation is dependent upon the evaporation of water. The water that evaporates leaves behind small quantities of salts. As new makeup water replaces the water that evaporates, more salts are brought into the system. Over a period of time the salts start to deposit on the hot surfaces of the condenser. As the deposits build up the heat transferring ability of the tubes decreases, causing an increase in the operating head pressure of the refrigerating system and a consequent lowering of capacity.

With moderately soft waters tube scaling can be prevented effectively by constantly bleeding off a portion of the water. In localities with hard or corrosive water or where organic slime is encountered, bleed-off alone is not enough. A competent water treatment specialist should be consulted for advice as to the best method of treating the water chemically. When bleed-off alone will do the job an amount equal to 1 or 2 percent of the circulating water should be sufficient.

Safety Requirements Determine Controls Used

The last application problem we shall discuss is the matter of control. Various electrical hookups can be used, depending on the degree of automatic safety demanded. The simplest arrangement is wiring the tower fan and pump motor starter holding coils through an auxiliary contact in the compressor starter. Thus, whenever the compressor starts, it is presumed that the tower fan and pump will start.

The scheme described above has several disadvantages. First, even though the compressor may start, there is no absolute assurance that the tower has started. There may have been a failure in the power lines to the tower pump and fan, or the fan belt may have broken. Second, even though the tower pump and fan motors are operating, there is no assurance that any water is reaching the condenser. It may have leaked out or have been drained, or the makeup line valve may have been closed. Third, where the tower is exposed to the sun over a period of prolonged shutdown, the water in the sump may have become very warm so that the compressor will cycle on the high pressure cutout until the water becomes cool enough to maintain a sufficiently low head pressure. Each time the compressor is stopped by the high pressure cutout it will have to remain off until the head pressure is reduced by natural heat leakage or pressure equalization within the system since the tower will not be operating to supply cooled water to the condenser.

An improvement in the control scheme would be to have the space thermostat start the pump. The compressor and fan starter holding coils are wired through an auxiliary contact in the pump starter. This improvement will allow the tower to remain in operation even though the compressor high pressure cutout has tripped and will thus allow water to be supplied to the condenser to reduce the pressure and return the compressor to operation more quickly.

A further improvement may be made by adding a thermostat in the water line to the condenser. This thermostat is wired into the compressor starter holding coil circuit to prevent the compressor from running until the water is cool enough for safe continuous operation. Some engineers prefer a pressure control in the water supply line to a thermostat, so the compressor cannot start unless the pump has developed sufficient pressure (see Fig. 3).

Maintaining Pressure Under Changing Conditions

Sometimes it is desirable to incorporate in the control scheme a means for automatically maintaining head pressure under widely varying outside conditions. The normal water regulating valve could, of course, be retained for this purpose, but its use imposes a severe additional pressure head which would increase the initial and operating costs of the pump. The head pressure in an atmospheric cooling tower may be controlled by an automatic valve in a second bypass connection around the condenser. The manually adjusted bypass previously described is used to establish maximum flow through the condenser. The second bypass is used to decrease water flow through the condenser in response to a fall in head pressure.

A simple method for controlling head pressure in a mechanical draft tower is wiring the tower fan to a thermostat in the sump water so it can shut off the air whenever the water temperature (upon which the head pressure depends) becomes too low. Another, and perhaps better, method is to install an air bypass to recirculate a portion of the air. With this arrangement, dampers responding to head pressure automatically regulate the amount of air bypassed.

Cooling tower maintenance requires periodic attention to lubrication of motor and fan bearings. (Some towers have been introduced with water turbine driven fan motors.) Treatment of water for hardness and organic growth must be attended to regularly. Exposed metal surfaces which show signs of rust must be wire brushed periodically and coated with metallic paint.

Developing a Pattern for a

Round Back Transition Elbow

. . . with a revision to permit use of a Pittsburgh lock former instead of a hand brake

THE FITTING and pattern layout of a round back transition elbow as shown on Fig. 1 was submitted to the author by a reader of American Artisan with the request that a study be made as to the practicability of eliminating the two lines U-X and X-W (Fig. 2) and substituting for them a straight line drawn between points U and W as shown by the dash line on the back pattern. This change would permit the substitution of a Pittsburgh lock former machine for a hand brake, which would be the practical method of forming a Pittsburgh lock on the angular side U-X-W.

To accomplish this change, working lines must be established as shown by line E and fall distance D on Fig. 5; with this combination, the necessary true length lines can be developed and brake lines indicated to fabricate a fitting to meet the proposed design requirements. It should be understood, however, that air will flow with less restriction when the duct sides are even and the area is constant. Should the horizontal difference in the widths of the air inlet-outlet be extreme and the throat distance short, the fitting as shown on Fig. 1 will contribute much more to a smooth, quiet operating system.

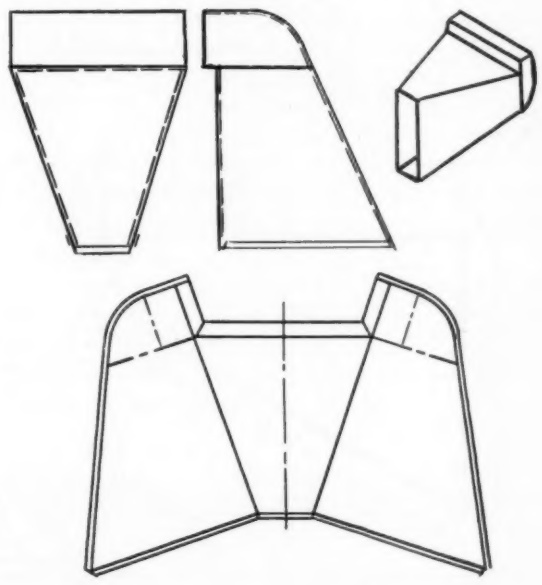
In systems where the design velocities are high, fittings with drastic shape changes and sharp air directional turns should be avoided. The saving of a few minutes of time in the fabrication of a fitting should always be considered in the light of the efficient working performance of the system.

The following is a step by step procedure to the pattern development problem:

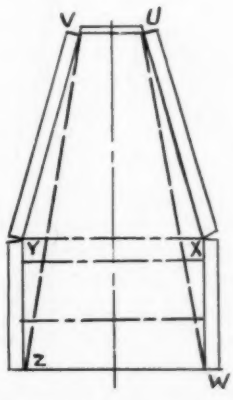
a) Draw a right angle and mark the intersection point Y. From Y, measure 1½ in. to the right on the horizontal line and mark the point O.

b) From Y measure down 1¾ in. on the vertical line and mark the point Z. With point O as center and radius ¾ in., draw a long arc. Continue the line Y-O to intersect the arc at point 1. Draw a line from point Z tangent to the arc. Draw a line from point O perpendicular to the tangent line and mark the intersection point Q.

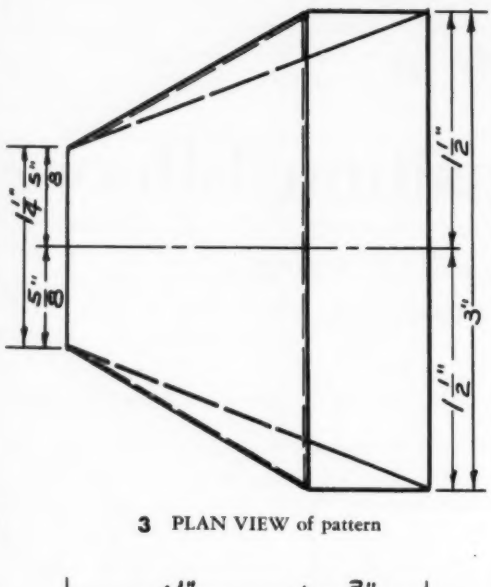
c) Draw a line connecting points 1-Q and mark this



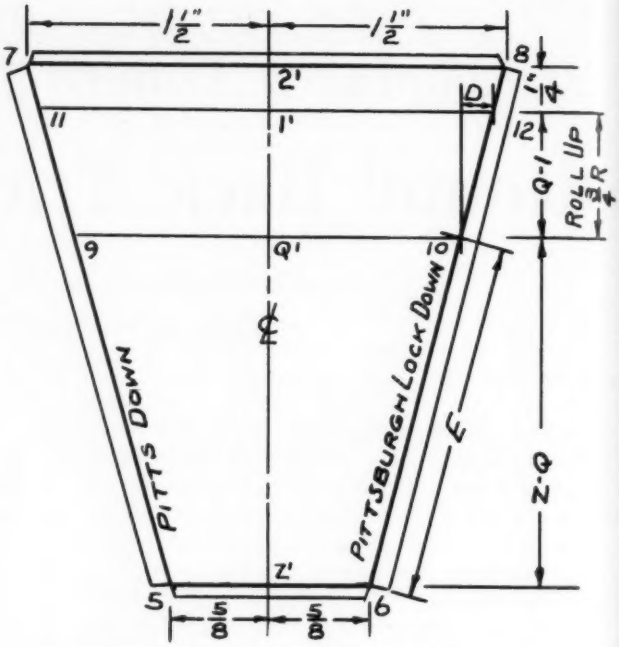
1 WORKING VIEWS for round back transition elbow, and . . .



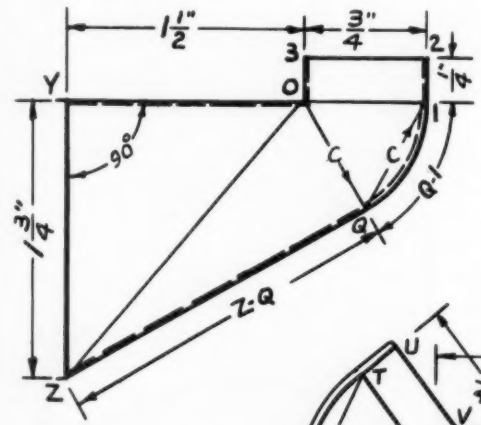
2 BACK PATTERN showing proposed change



3 PLAN VIEW of pattern

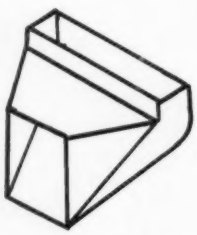


5 BACK PATTERN with straight line substituted

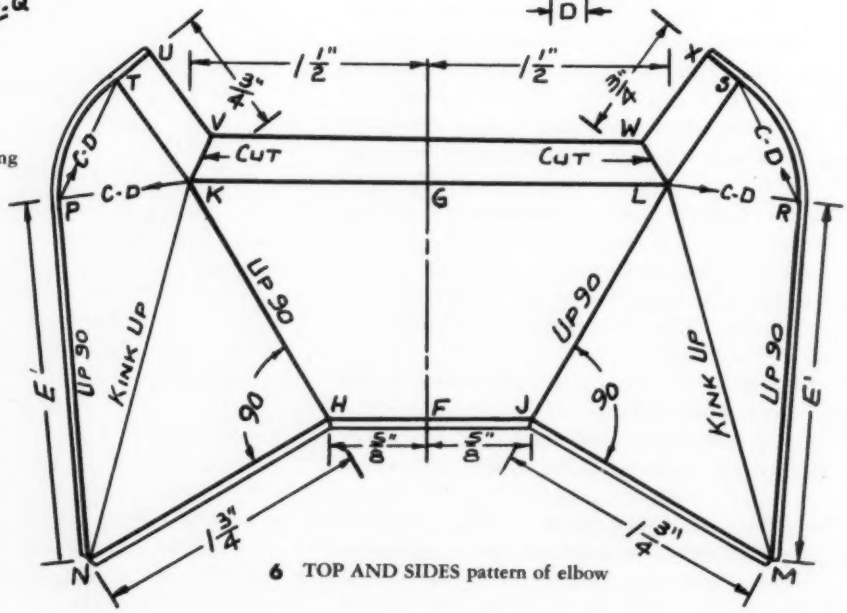


4 FRONT VIEW of fitting

DEVELOPED lines



PICTORIAL drawing



6 TOP AND SIDES pattern of elbow

line C. From line O-1, measure up ¼ in. and draw the collar section 0-3-2-1. Draw a line connecting points O-Z.

To Lay Out the Back Pattern—Fig. 5

a) Draw the vertical center line and establish the point Z′. From Fig. 4 transfer lengths Z-Q, Q-1, and 1-2 to the center line, Fig. 5, and mark the points Q′, 1′, 2′. Through the points, draw lines perpendicular to and extending on both sides of the center line.

b) From Z′ measure ⅝ in. on both sides of the center line and mark the points 5 and 6. From point 2′, measure 1½ in. on both sides of the center line and mark the points 7 and 8. Draw the lines 5-7 and 6-8. Mark the points where the line drawn through point Q′ intersects lines 5-7 and 6-8 with the numbers 9 and 10, and the points where the line drawn through point 1′ intersects lines 5-7 and 6-8 with the numbers 11 and 12.

c) From point 10, draw a line perpendicular to line 9-10 to intersect line 11-12. Mark the difference between the length of lines Q-10 and 1′-12 with the letter D.

d) Mark the distance of line 6-10 as length E.

The Top and Sides Pattern—Fig. 6

a) Draw a vertical center line and establish point F. From this point measure up 1½ in. and mark the point G. Through points F and G draw lines perpendicular to and extending on both sides of the center line.

b) From point F, measure ⅝ in. on both sides of the center line and mark the points H and J. From point G, measure 1½ in. on both sides of the center line and mark the points K and L. Draw the lines H-K and J-L.

c) From point H draw a line perpendicular to line H-K. Measure the given length 1¾ in. as shown on Fig. 4, and mark the point N.

d) Draw a line from point J perpendicular to line J-L. Measure the given 1¾ in. length and mark the point M.

e) Set a compass at length E (Fig. 5) and with points M and N (Fig. 6) as centers, draw arcs to the right of point L and to the left of point K.

f) Draw a right angle. Transfer line C from Fig. 4 to the vertical leg, and fall distance D from Fig. 5 to the horizontal leg. The hypotenuse C-D is the developed line. With point L, Fig. 6, as center and radius C-D, cut the arc E and mark the point R. With point K as center, cut the arc E, and mark the point P.

g) With a compass, measure the developed hypotenuse line C-D. With points R and P as centers, and radius C-D, draw arcs to the right of point P and the left of point R. With ¾ in. (Fig. 4) as radius and point L (Fig. 6) as center, cut the arc C-D and mark the point S. With the same radius, and point K (Fig. 6) as center, cut the arc C-D and mark the point T.

h) With L as center and radius C-D, draw a long arc to intersect points S and R. Draw a line connecting points M and R.

j) With K as center and radius C-D, draw an arc to intersect points P and T. Draw a line connecting points N and P.

k) Draw the lines T-K and S-L. From lines T-K, K-L and L-S, measure ¼ in. and draw the parallel lines U-V, V-W and W-X.

Add allowances for seams and joints, and mark the pattern for fabrication.

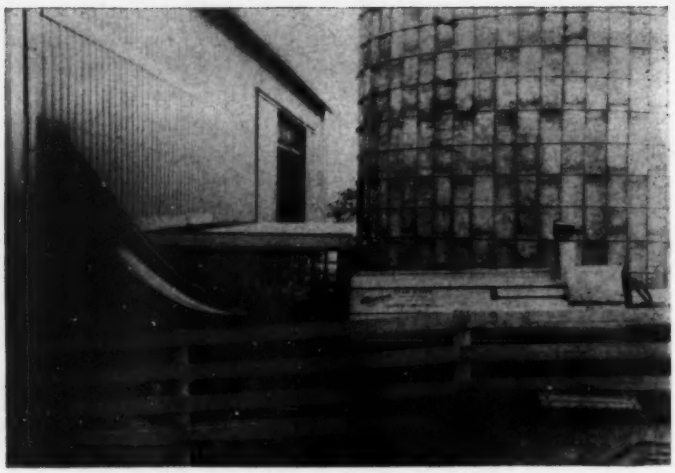
ASHAE Reports Cover All Phases of Industry

MANY SUBJECTS of interest to the sheet metal contractor, warm air heating and residential air conditioning dealer were presented to members of the American Society of Heating and Air-Conditioning Engineers meeting in San Francisco at the semi-annual meeting June 27-29.

Subjects of specific interest to sheet metal contractors covered ventilation problems encountered in commercial laundries. A paper presented by Sidney Marlow dealt with hoods for flatwork ironers, presses and washing machines as well as recommended locations for exhaust fans and required air volumes.

Also of interest to the sheet metal contractors as well as warm air heating and residential air conditioning dealers was the paper, *Performance and Evaluation of Room Air Distribution Systems* by Alfred Koestel and G. L. Tuve (this article is being summarized and will be published in an early issue of American Artisan), and a *Symposium on Evaporative Cooling* which was comprised of eight speakers and a chairman, each of whom spoke on separate subjects dealing with this field (a complete report on the symposium will also appear in an early issue of American Artisan). A third paper dealing with the *Size Distribution and Concentration of Airborne Dust* by K. T. Whitby, A. B. Algren and R. C. Jordan pointed out the steps which must be taken toward developing more effective air filters.

Discussions of interest to warm air heating and residential air conditioning dealers included such subjects as *A Method for Determining Winter Design Temperature* by M. K. Thomas; *Periodic Heat Flow Through Flat Roofs* by D. J. Veld, M. L. Erickson, G. V. Parmelee and A. N. Cerny; *Air Conditioning Coil Odors* by A. B. Hubbard, Nicholas Deininger and Frederick Sullivan; and *Psychometric Analysis for Design of Forced Draft Cooling Towers* by S. E. Agnon and B. H. Spurlock, Jr., all of which contained essential information on development of products that deal with the subjects mentioned. The picture painted by these papers illustrated to members what type of equipment will be made available in this field in the near future.



1 WARM AIR is directed from portable furnace to loft duct through canvas connector

2 MAIN DUCT is tapped by trap door which feeds air to upper branch ducts. Propeller fan (rear) regulates temperature

Portable Furnaces Find Use on the Farm

Warm air treatment of freshly harvested hay and other crops in the loft minimizes shrinkage, spoilage, loss in food value and other problems which previously lowered market prices

MECHANIZATION OF farm operations has played an important part in the growing of larger and better crops which are being harvested today. An accompanying problem has been storage of the produce under proper conditions so that waste and damage are reduced to a minimum. To aid the farmer in this respect, considerable experimentation has been directed to scientific methods of handling newly harvested crops. Forced warm air heating has achieved highly satisfactory results as a medium for preparing various harvests for storage; among these crops is hay, which is rated third in value of all farm produce.

Treated according to the techniques recommended by the University of Wisconsin, hay will not only undergo considerably less shrinkage and loss due to mold, but also will retain many of its vitamins, resulting in healthier stock during the winter.

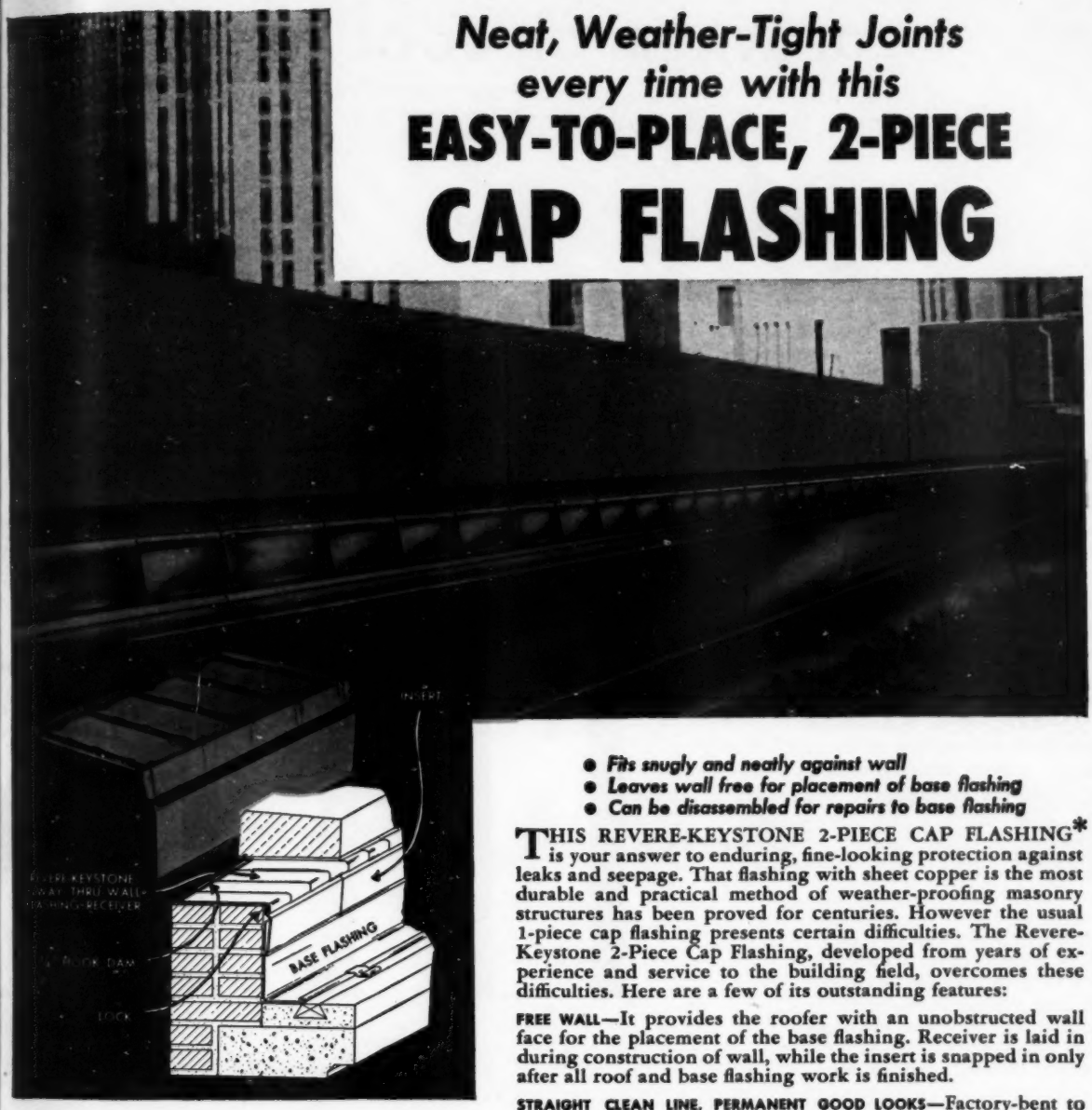
Furnaces Ideal for Hay Drying

The hay drying system utilizes ducts for distribution of heated air and a portable furnace which contains its own high velocity blower (Fig. 1). The air distribution system usually has slotted wood frames for branch ducts; however, some systems use metal ducts with supporting frames. Fig. 2 is an interior view of a 6 × 4 ft main duct. Openings at the bottom are outlets for branch ducts as shown in Fig. 3 (bottom). The trap doors (one is shown open in Fig. 2) feed

(*Continued on page* 80)

Neat, Weather-Tight Joints every time with this

EASY-TO-PLACE, 2-PIECE CAP FLASHING

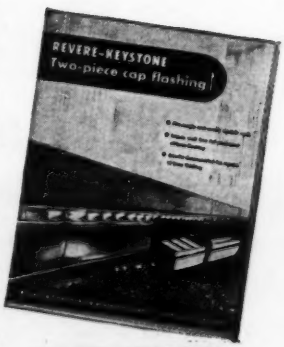


Top photo shows a typical installation of the Revere-Keystone 2-Piece Cap Flashing of all-copper construction. Note the snug fit and neat appearance.

Insert is furnished in 51" lengths, for recommended overlap of 3" minimum. Width is 4" on exposed face, to allow for a minimum 3" overlap of the base flashing.

Receiver is furnished in 49" lengths (48" layup), with 1" overlap in a locking tongue dam which assures proper alignment. REVERE-KEYSTONE 2-PIECE CAP FLASHING IS AVAILABLE IN TWO IN-THE-WALL FORMS.

a) Standard 4" flat copper receiver; with ¼" hook dam.
b) Combination receiver and thru-wall flashing (shown in isometric above).



SEND TODAY FOR THIS DESCRIPTIVE FOLDER ON THE REVERE-KEYSTONE 2-PIECE CAP FLASHING FOR YOUR FILES. IT GIVES FULL CONSTRUCTION DETAILS!

- *Fits snugly and neatly against wall*
- *Leaves wall free for placement of base flashing*
- *Can be disassembled for repairs to base flashing*

THIS REVERE-KEYSTONE 2-PIECE CAP FLASHING* is your answer to enduring, fine-looking protection against leaks and seepage. That flashing with sheet copper is the most durable and practical method of weather-proofing masonry structures has been proved for centuries. However the usual 1-piece cap flashing presents certain difficulties. The Revere-Keystone 2-Piece Cap Flashing, developed from years of experience and service to the building field, overcomes these difficulties. Here are a few of its outstanding features:

FREE WALL—It provides the roofer with an unobstructed wall face for the placement of the base flashing. Receiver is laid in during construction of wall, while the insert is snapped in only after all roof and base flashing work is finished.

STRAIGHT CLEAN LINE, PERMANENT GOOD LOOKS—Factory-bent to precise dimensions. This, with the one-inch locking tongue, assures alignment of receiver slots, uniform appearance.

PERFECT WEATHER-SEAL—Factory-formed angles on the receiver and insert cause latter to hug the base flashing, weather-seal effectively. Water cannot blow up behind flashing.

VERTICAL RECEIVER SLOT ON WALL FACE—Position of vertical receiver slot on face of wall eliminates possibility of the receiver slot being crushed shut by weight of masonry.

CAN BE DISASSEMBLED—Insert can be removed with a simple tool and used again, with no loss of neatness or snugness, when the built-up base flashing or roofing have to be repaired.

*Patented June 9, 1953—No. 2,641,203. Other Pats. Pend.

REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801
230 Park Avenue, New York 17, N. Y.
Mills: Baltimore, Md.; Brooklyn, N. Y.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Newport, Ark.; Rome, N. Y.
Sales Offices in Principal Cities, Distributors Everywhere

FOR CORRECT DIRECTIONAL CONTRO
OF WARM OR COOL FORCED AIR.

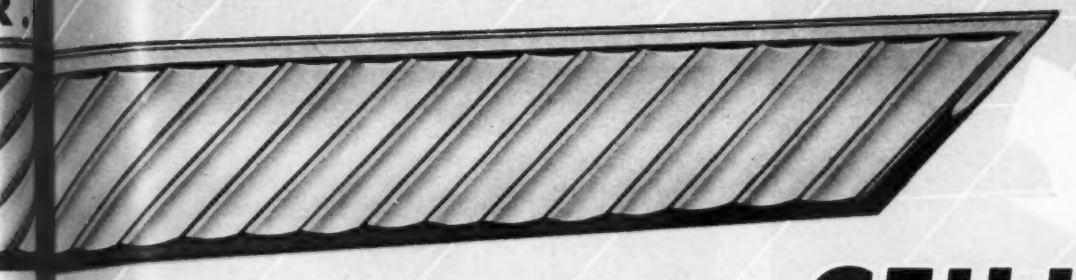
AN EXCLUSIVE DIRECT CONTROLLING ACTION PUTS THE AIR WHERE IT IS NEEDED... CREATES CORRECT AIR PATTERNS FOR MAXIMUM (draft-free) ROOM COMFORT.

THAT IS WHY NOTHING IS LEFT TO CHANCE WHEN YOU INSTALL TITUS DIFFUSERS... **YOU KNOW THEN THE HEATING OR COOLING SYSTEM YOU PUT IN THE BUILDING WILL PERFORM WITH MAXIMUM EFFICIENCY *AT THE ROOM LEVEL... THE ONLY AREA WHERE YOUR WHOLE SYSTEM IS JUDGED.***

Remember, drafts are old-fashioned... they cause the entire heating or cooling system to be blamed for something that is not that system's fault. That's why you can't afford to gamble on an old-fashioned grille that is incapable of handling the complex demands of modern heating and cooling. Moreover, the great flexibility and adjustability of Titus diffusers helps correct any miscalculation. This eliminates call-backs ... because homeowners can adjust the system to suit their own personal needs.

Specify TITUS

FOR CORRECT DIRECTIONAL CONTRO
OF WARM OR COOL FORCED AIR.



from the CEILING

ALL NEW SERIES 200 CEILING GRILLE

Has 100% adjustability with a revolutionary air directing performance that almost eliminates duct costs in overhead systems. For 5 important applications: (1) for overhead forced air systems, (2) for high sidewall installations, (3) for replacement of outmoded warm air registers when cooling is added, (4) for replacement of inefficient outlets in problem areas to correct chilling or drafts, (5) for bringing in overhead air conditioning where steam or hot water are presently used.

NEW COLOR STYLED PERIMETER DIFFUSER

The most advanced model in design, appearance, performance. Built to precision standards. Keeps uniform temperatures throughout the room. Directs air with such efficiency it eliminates low level stratification.

Now features a new built-in damper on every model... *at no increase in price.*

In addition it has a sparkling new beige metallic hammertone finish plus a new damage-proof safety packaging, with each diffuser individually boxed.

The new hammertone finish and color styling brings an impact of distinctive modern design to any room. It is the most beautiful finish ever created for perimeter diffusers.

DIFFUSERS

SEND FOR FREE CATALOGS TODAY

TITUS, INC., Waterloo, Iowa

Gentlemen: I want to be assured of successful Air Diffusion performance on every forced air heating and cooling job. Please give me complete information on these new Titus diffusers that are creating a new trend in air diffusion.

Name _____

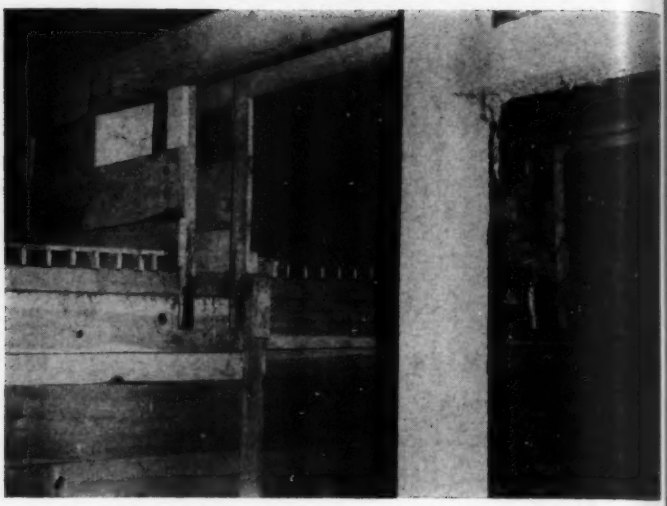
Address _____

Company _____

City _____ State _____

from the FLOOR

3 BRANCH DUCTS circulate warm air thoroughly through freshly cut hay



4 MAIN AND UPPER branch ducts effectively distribute warm air to all parts of the loft

Portable Furnaces Add New Touch to Crop Drying

(*Continued from page 76*)

warmed air to the upper branch ducts which in turn discharge air into the center of the hay pile. Fig. 4 shows the upper branch ducts and the top of the main duct where streams of warmed air are also discharged into the hay being cured.

The portable furnace for drying hay has many other uses around the farm; corn and other grains are improved when they are harvested according to recommendations available from most college experimental farms. Many farmers buy their portable furnaces; others form a cooperative arrangement and share the use of the furnace. In some localities, farm equipment suppliers rent the furnaces to farmers on a daily fee basis. A canvas connector (Fig. 1) is used to adapt the portable furnace outlet to the farmer's hayloft duct system.

Oil, coal and LP gas perform well as fuel for crop dryers when the heat output is adjusted to the air volume, which is usually supplied by propeller type fans. The dryer in Fig. 1 is rated to use from 4 to 8 gph of oil; Btu capacities range from 395,000 to 850,000, depending upon the air volume and static pressure of the duct system. Air volume, often moved by a 7½ hp electric motor, is adjustable from 4000 cfm at 4 in. static pressure to 16,200 cfm at ½ in. static pressure.

Heated Air Must Be Tempered

The temperature rise in discharge air is also adjustable, ranging from 25 to 120 deg depending on the duct system. Fig. 2 shows a propeller fan located at the outside wall end of the main duct. This fan is used to temper the heated air with outside air so a sufficient volume of air at the correct temperature will be supplied to the crop being cured. This fan uses a 10 hp motor to deliver the required air volume. The air volume normally used for hay drying is 15 cfm at 1¼ in. static pressure for every sq ft of mow area. Higher volumes are permissible, but lower volumes require too much time to dry the crop and fail to reach all corners of the loft, leaving remote sections of the stored crop untreated.

Though propeller fans were used in the Wisconsin experimental installation, centrifugal fans have proved equally satisfactory. Selection of the blower is usually based on 1¼ in. static pressure. Other factors such as noise, tip speed and velocity, normally of concern when selecting blowers, are not considered here.

Well Worth the Effort

Scientific hay drying has many distinct advantages:

1) The hay has the correct moisture content, which insures its sale at top prices.

2) Spoilage is reduced to a minimum.

3) The hay has higher food value which contributes to healthier livestock.

4) Weather has little effect on harvesting time.

5) A saving in man hours is effected because windrow turning is eliminated.

6) Spontaneous combustion during the storage period is prevented.

7) From 10 to 15 percent more hay is harvested because small leaves and stems stay together when freshly cut hay is stored in the loft the same day it is cut.

Copper

The Proved metal for roofing and construction

Install with confidence!
—its history proves its durability

Costs less because it serves longest!

Fabricates with ease!

Solders and Brazes!

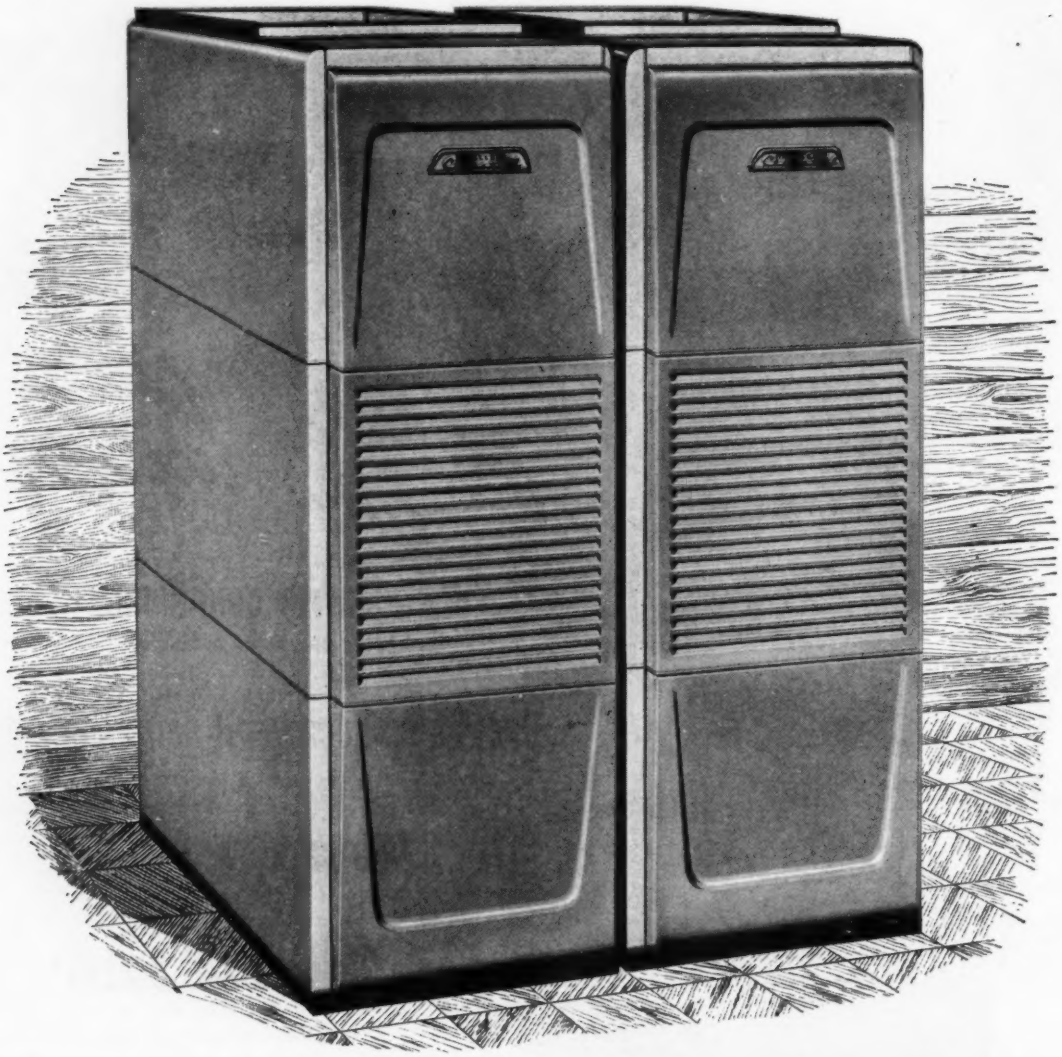
Reserve for copper the jobs that copper has always done best. No other metal has the century-old history of durability and complete dependability under the most severe weathering conditions. Only copper has the extreme flexibility that permits easiest and most perfect fabrication on or off the job site. There are "best" materials for everything—for roofing, drainage work and weather-proofing it's HUSSEY COPPER.

COPPER
HUSSEY
BRASS

C. G. HUSSEY & COMPANY
(Division of Copper Range Co.)
ROLLING MILLS AND GENERAL OFFICES
PITTSBURGH 19, PA.

7 WAREHOUSES Pittsburgh, Cleveland, St. Louis, Philadelphia, New York, Chicago, Cincinnati

Years Ahead!



Tomorrow's Heating and Cooling Units Today

Mueller Climatrol

The Most Complete Line

A Deluxe Line for custom homes, modernization jobs: highboys, lowboys, companion units.

The Suburbanaire Line for competitive jobs, housing projects: gravity, counterflows, horizontal, highboys, lowboys.

A Commercial Line of unit heaters, boilers and packaged air conditioners in a wide range of sizes.

A Conversion Line of add-on cooling, conversion burners, incinerators, blower-filter units; a recessed summer conditioner.

A Cooling Line second to none. Air cooled and water cooled in wide range of sizes — deluxe units, packaged units, add-on units, self-contained and remote units.

98th Anniversary

From drawing board to final inspection, Mueller Climatrol's *advanced thinking* is in evidence. You see it in Mueller Climatrol's modern experimental department and laboratories. You see it on the production line. You see it in Mueller Climatrol's handsome styling. You see it in the many Mueller Climatrol features that give your customers better performance—and give *you* something extra to sell.

We think ahead to keep *you* ahead of competition — to help you enjoy more sales and profits. Make the most of this. Write us: Mueller Climatrol, Dept. 175, 2030 West Oklahoma Avenue, Milwaukee 15, Wisconsin.

D-184

NEARLY 100 YEARS OF MANUFACTURING QUALITY COMFORT EQUIPMENT

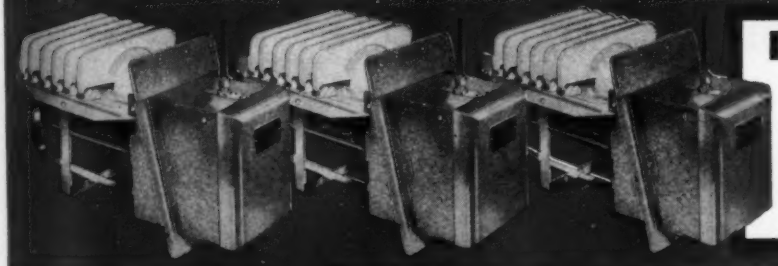
AUTO-FLO CORP., IN COOPERATION WITH PARTICIPATING WHOLESALERS WILL GIVE YOU A . . .

FREE

Auto flo FUEL OIL FILTER

WITH THE PURCHASE OF...

3 Auto flo "100" AUTOMATIC HUMIDIFIERS



INTRODUCTORY OFFER!

JUNE 15th to AUGUST 15th

GOOD IN THE U.S.A. ONLY!

ORDER NOW FROM YOUR WHOLESALER

NO SUMMER SLUMP!

BIG PROFITS in your OFF SEASON

IF you sell AUTO-FLO Heating Accessories

And you KEEP your PROFITS when you install quality Auto-flo Heating Accessories—no loss of profits in expensive service call-backs.

AUTO-FLO CORP. 14500 SCHAEFER DETROIT 27, MICH.

MODERN SHOWROOM sets off remodeled residence to produce air of quiet respectability

'Good Front' and Customer Comfort Build Dealer's Sales Volume

A remodeled residence cuts overhead costs and brings in customers where they can be shown and sold in comfort

By Gerald Brant
Reliable Heating Co.

When Reliable Heating Co. opened for business at its new location in Massillon, Ohio, it was with several misgivings. That was on May 1, 1954, and we were moving into a residential section, in a building we had remodeled at a cost of around $10,000, after 22 years of renting in a downtown location.

Of course we were happy that we were able to make the move and escape our monthly rental. We had, moreover, the kind of a showroom which we considered ideal for the heating dealer. But we wondered what public reaction would be.

First, we were moving away from our sidewalk traffic which had been valuable to us, and knew we would have to depend on reputation and advertising to bring people to us. Secondly — and this was a thought which gave us much concern — we were putting up a "good front," which many people in this business will tell you is bad. They theorize that if people see that you have been prosperous, they will think that you are making too much profit on heating and air conditioning jobs, and they will seek out the smaller hole-in-the-wall

(*Continued on page* 88)

)on't let her get away...

til she's seen your Norman Sketchbook!

, it's a swell idea . . . this Norman Sketchbook. Who ever heard of a better way emonstrate the amazing versatility of the Norman Southerner to builders new home heating prospects".

Norman heating dealers have already been asked for permanent file copies Norman Sketchbook by builders and architects. But catching up with new home ng prospects is another thing. As far as we know, they just don't walk your showroom and ask for a demonstration of the Norman Sketchbook.

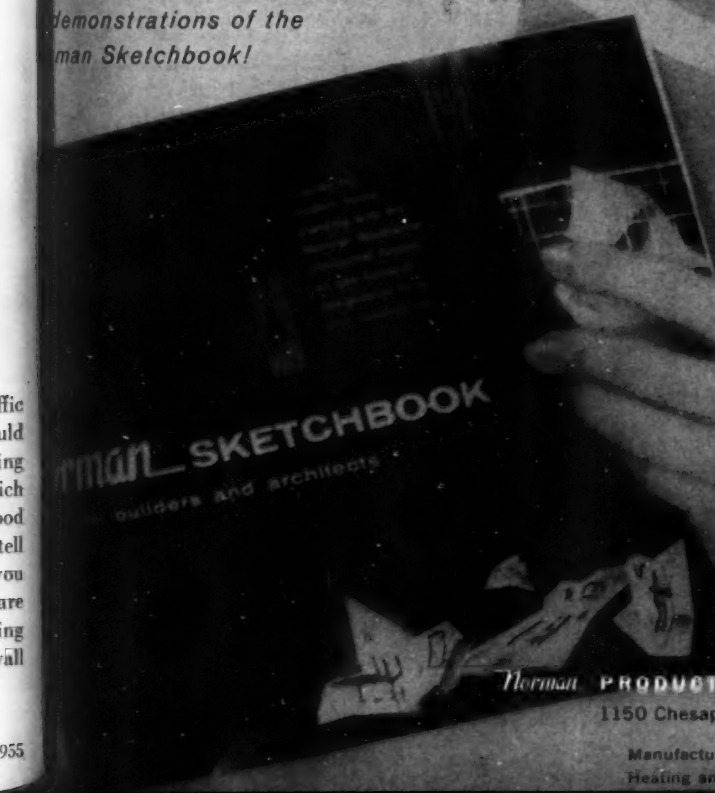
is, unless you've already established yourself as the Norman heating dealer in the through your own local advertising program. Cooperative advertising, for example, that's ied to you in the big, new Norman advertising promotion package, lets your heating ects know all about the many advantages of home heating with the Norman Southerner!

e material in this handy Norman promotion package is supplied for free of charge, by your Norman distributor. In addition to a complete line wspaper advertising mats, you'll find illustrated literature and sales rs for use in your own regular mailings.

ts nothing, so be sure to get your local Norman advertising otion package today. Write or call!

insists on doing off with your Norman Sketchbook, let her have it! n't give in without a struggle. Then write or call us, and we'll our Norman distributor to send you another copy without charge!

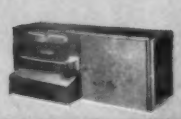
man heating dealers uncover spects through Norman operative advertising; use l promotion to set demonstrations of the man Sketchbook!

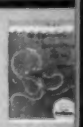


Norman PRODUCTS COMPANY
1150 Chesapeake Avenue Columbus 12, Ohio

Manufacturers of a Complete line of Gas Heating and Air Conditioning Equipment

The **Norman Southerne**
Horizontal Forced-Air Gas Furna





NEW LOCAL ADVERTISING PACKAG

Another big promotion f Norman heating deale A complete package advertising and sales pr motion material . . . inclu ing local newspaper adv tising mats. Send for yo free copy today!

WORTHINGTON DEALERS ARE SUCCESSFUL DEALERS!

"Worthington put an end to my financing headaches"

"It takes money to make money," says Nat Jewell, Hot Springs, Arkansas' leading air conditioning and refrigeration dealer. Like many another Worthington dealer, he's enthusiastic about the financial backing that's part and parcel of the Worthington franchise. Here's what Mr. Jewell says about it:

"The kind of inventory I need at the start of the selling season would ham-string me financially – except for one good reason – Worthington doesn't tie up my capital when I need it most! When sales get ready to roll, I've got a warehouse full of products . . . and still have money in my pocket for all the advertising and sales help I need to do a good job. As far as I'm concerned, Worthington's got the broadest and most sensible financing program in the business."

Worthington can end your financing worries — 6 ways!

SEASONAL DISCOUNTS

Save up to 5% on carload lots by ordering in advance of the season. Early ordering assures sufficient stock and saves you money.

FIELD WAREHOUSING PLAN

Set up a complete inventory in your own warehouse and pay for it as you use it. Put your capital to work as you see fit.

RETAIL FINANCE PLAN

Retail dealers can discount their retail paper through Worthington (or through their local bank) . . . guaranteeing 48-hour service.

RE-PURCHASE AGREEMENT

The re-purchase agreement is designed to increase your present line of bank credit, enabling you to carry more stock — and sell more.

DEFERRED PAYMENT PLAN

Keep off-season sales high by inviting prospects to buy now . . . pay months later. Small down payment covers your installation costs.

CO-OP ADVERTISING

Reap benefits of Worthington's big-money national advertising program . . . plus generous co-op advertising plans.

Like Nat Jewell, you'll agree that Worthington backs its dealers to the hilt with the."broadest and most sensible financing program" in the industry. It's just one of many reasons why Worthington dealers are successful dealers. You'll find many more in Worthington's new monthly publication, "The Merchandiser." Write for it today. Worthington Corporation, Air Conditioning and Refrigeration Division, Section A.5.49-A , Harrison, New Jersey. A.5.49

WORTHINGTON

THE BEST FRANCHISE . . . THE MOST COMPLETE LINE

I'm thinking BIG . . . and Growing with

Airline

NORGE HEAT

HEATING AND AIR CONDITIONING

You'll grow, too . . . . IF you join the *Airline* team! Activity's high. Ideas are boiling. And we've got a powerhouse sales program for ambitious, big-thinking heating and air conditioning men.

Now's the time to get set with the valuable *Airline* franchise. Get ahead with America's hottest line of gas and oil fired forced air furnaces . . . conversion burners . . . air and water cooled air conditioners . . . gas and electric water heaters . . . incinerators. All with advanced features . . . smart, compact styling . . . economical performance . . . *plus* easy, low-cost, high-profit installation.

See how the *Airline* franchise protects you and pays off . . . now . . . and in the future. Send that coupon—*today!*

ALL NEW! SUMMER AIR CONDITIONERS

Both air and water cooled models, including remote units. Compact 2, 3 and 5-ton sizes—all easily installed. Handsome hammertone cabinet finish. Greatest values in existence!

ALL NEW! GAS FIRED FURNACES

Hi-Boy, Lo-Boy, Counterflow and Horizontal units—from 70,000 to 200,000 Btu input. High efficiency sectional heat exchanger. Built-in draft diverter. Enclosed controls. A.G.A. approved for all gases.

ALL NEW! OIL FIRED FURNACES

Exceptionally compact Hi-Boy, Lo-Boy, Counterflow and Suspended models. Sizes: 80,000 to 165,000 Btuh output at bonnet. Amazing "Rapid Transit" heat exchanger assembly, factory installed. All top buys.

ENGINEERING B-W PRODUCTION

Hustle in this Coupon Now!

BACKED BY

BORG-WARNER

Airline products are manufactured by Ingersoll Conditioned Air Division of Borg-Warner Corporation. These names are known the world over . . . for tremendous engineering and production facilities. That's why Airline quality satisfies customers . . . builds good will!

INGERSOLL CONDITIONED AIR DIVISION, Borg-Warner Corporation
Dept. AA, 760 E. Vine St., Kalamazoo, Mich.

Rush Airline details for:

- ☐ Franchise Distributor
- ☐ Dealer
- ☐ Have your representative call on us

Name _____

Company _____

Address _____

City _____ State _____

Heating Sales Grow in Remodeled Residence

(*Continued from page* 84)

SPACIOUS DISPLAY AREA permits showing of diversified equipment to best advantage

ATTRACTIVE AND comfortable interview area is one of the company's prime assets

operations because they think they will get a better price deal.

Showroom Builds Company's Reputation

After a year, we are happy to report that our new showroom has had, in fact, the opposite effect. If anything, it has convinced people of our solidarity, our ability to do acceptable work, as evidenced by our obvious prosperity. The new location has proved valuable for other reasons, too, and we have already found much of the advance planning which went into the new location paying off.

We were not without problems, many of which were brought on by city zoning regulations and ordinances which affected us when we moved to the residential location. We had to comply with these laws, at the same time incorporating the things we wanted in our new showroom. The result is a balance of necessity and convenience which we have found ideal.

Before buying the old house, we made sure that we could build the 30 × 35 ft showroom we wanted on the front, extending it to the front sidewalk. This we found was possible because city zoning ordinances specified that any new building on a street in this section could extend to the front only as far as did existing establishments in the same block. Fortunately, there was a small grocery store on the corner which set the precedent we needed.

Investigate City Ordinances

The location, while outside the heavy traffic of the downtown shopping area, is good from parking and accessibility standpoints. Located on the Lincoln highway (U. S. 30), there is a wide street with parking available on both sides, and a lot in the rear of the building we use for customer parking. In further checking local ordinances, however, we found we had to build a 12 in. cinder block firewall on one side of the showroom because there was a home within 16 ft, and we must run all electrical wiring underneath the cement floor in aluminum tubing (for outside neon and display area lighting). By checking these ordinances beforehand, of course, we were able to incorporate these changes in the original blueprint, saving heavier expense later. Based on our experience we recommend that any dealer contemplating a new location or remodeling consult local ordinances first.

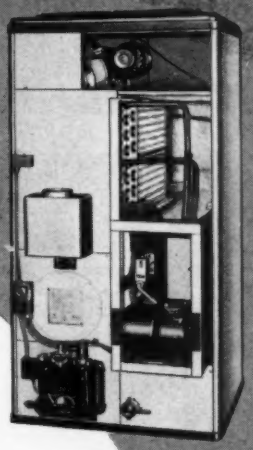
We removed an old front porch from the house and cut a stairway into the full basement; this was to be our shop and storage area. In the house itself, we re-

(*Continued on page* 92)

Announcing . . .

MONCRIEF

Counterflow Year 'Round Air Conditioner



Counterflow Year 'Round Unit with Gas Burner and Water Cooled Refrigerant System. Complete Refrigerant Circuit is mounted in Furnace Cabinet.

Same unit with Oil Burner and Air Cooled Refrigerant Circuit. Only the Cooling Coil is mounted in the Furnace cabinet. Refrigerant Tubing, coiled for shipment, will lead to remote Air Condenser-Compressor Assembly.

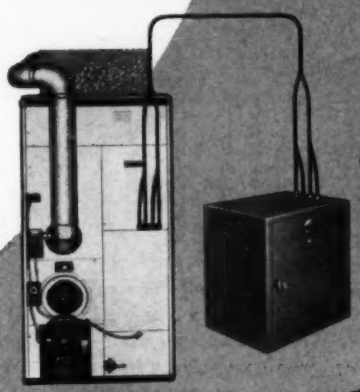
NOW! Moncrief's distinctive Year 'Round Air Conditioning is available in an all-in-one Counterflow Unit, especially designed and built for installation in a closet or the utility room of the home without a basement. This unit provides 2 Ton Cooling with a choice of either an Air Cooled, Remote or Water Cooled Refrigerant System, with either Gas or Oil Fired 100,000 B.T.U. input Heating.

● Warm air for heating and chilled air for cooling are both supplied from a single unit that can be installed in less floor space than many standard furnaces. Factory charging and hermetic sealing of both the Air and Water Cooled Refrigerant Circuits means no on-the-job charging, easier installation. Vertical positioning of the Cooling Coil within the furnace cabinet assures against condensate collecting in air supply runs that are imbedded in concrete or located under the floor.

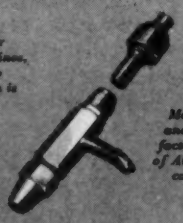
Moncrief's prices are competitive — competitive even in today's competitive market. Get the full Moncrief story from your Moncrief Wholesaler, today!

Cooling Coils for Air Cooled Systems Now Available with either 30 ft. or 50 ft. of Refrigerant Tubing.

Both Air Cooled and Water Cooled Refrigerant Systems are Factory Charged and Sealed



Air Cooled Counterflow Year 'Round Unit with Refrigerant Lines, leading from Cooling Coil to Air Condenser Assembly which is installed in a remote place.



MAGI-COUPLING
Makes it possible to charge and hermetically seal at the factory the 2 separate sections of Air Cooled System. Provides connection without loss of refrigerant charge.

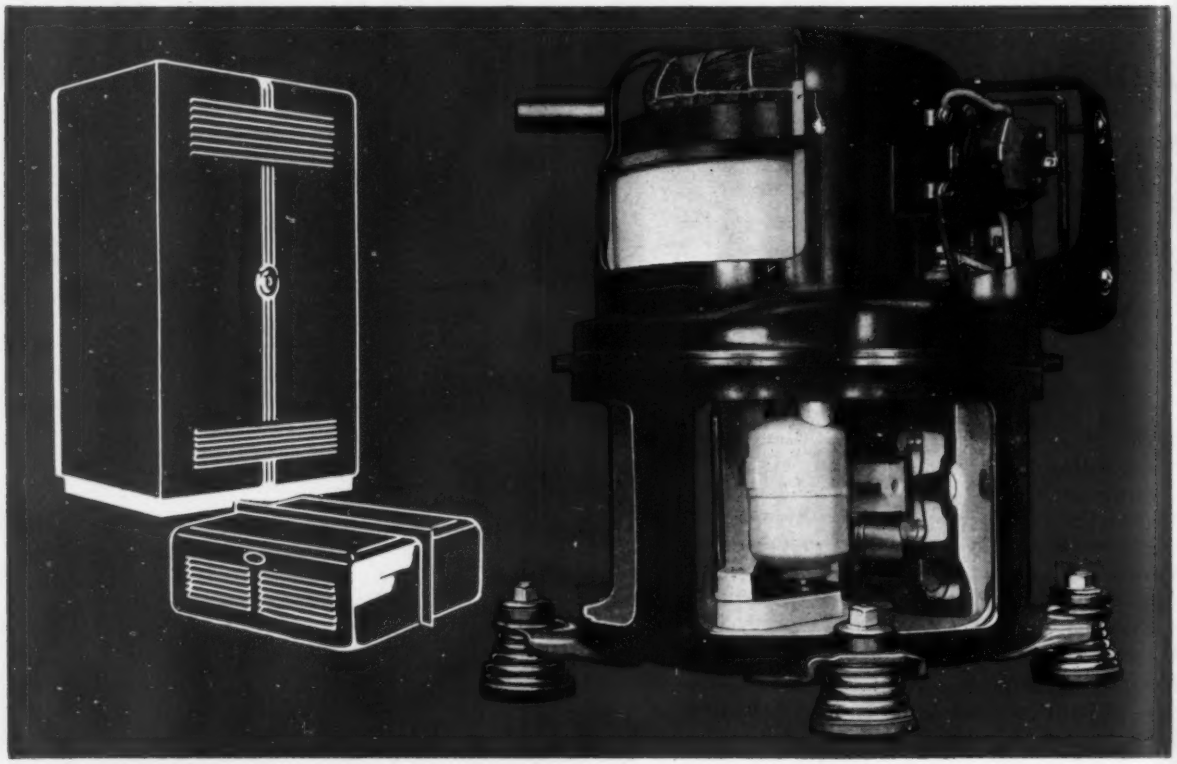
Approved for Gas!
Approved for Oil!

THE HENRY FURNACE COMPANY • **Medina, Ohio**

HEATING AND AIR CONDITIONING UNITS — MONCRIEF — FURNACE PIPE AND FITTINGS

WHISPER-QUIET **POWER**

for package Air Conditioning



COPELAWELD *HERMETIC*

It takes real engineering (and knowledge of your customers' needs) to produce a welded motor-compressor that combines positive performance, vibration-free smoothness, and maximum operating economy.

Copeland gives you these design advantages and more . . . plus precision manufacture using finest components. Heavy-duty, high-power-factor motor delivers power aplenty with minimum current consumption. Freon-12 and Freon-22 models available. Use of Freon-12 can give you as much as 75°F. lower temperatures in windings, crankcase, oil and discharge side. Unusually high capacities make Copelaweld motor-compressors adaptable to virtually every type of duty.

Power all your air conditioning and refrigeration equipment with Copeland motor-compressors. It's *the* quality equipment that enhances your reputation by its long-run, trouble-free service.

Get full details . . . write today for complete information on the profit-making Copeland line.

REFRIGERATION UNITS (OPEN TYPE AND COPELAMETIC) WATER COOLERS

Copeland

DEPENDABLE REFRIGERATION

COPELAND REFRIGERATION CORP[illegible] · SIDNEY, OHI[illegible]

NO MORE "UPS AND DOWNS" IN TEMPERATURE...

when you install "Constant Comfort"

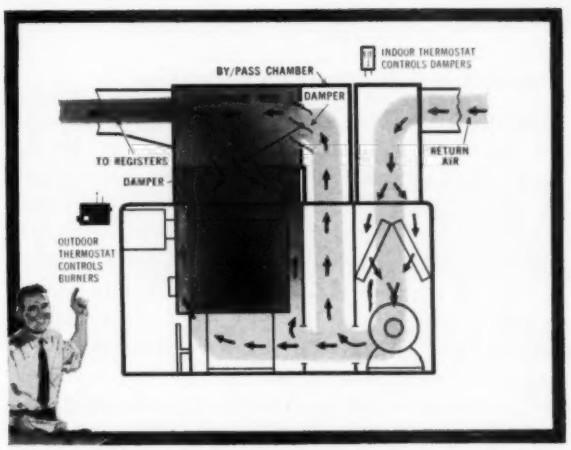
Waterbury Comfortrol BY/PASS HEATING®

It opens up a new market for you!

Home owners are asking more questions about *comfort* these days . . . and taking a closer look at heating plants, too. When you install new Waterbury COMFORTROL By/Pass Heating, you *can* promise *constant comfort* . . . a constant flow of air at "just right" temperature that eliminates the "hot-and-cold" feeling that comes with ordinary on-and-off heat.

No matter what kind of weather prevails outside, Waterbury COMFORTROL By/Pass Heating assures evenly-distributed comfort in *every* room in the house . . . with NO "layer-cake" heat, NO cold areas between you and the windows, NO hot or cold blasts! In fact, tests show less than one degree temperature variation between floor and ceiling with COMFORTROL!

Check into this *new concept* of home comfort. Install it! Talk about it! You, too, will find that Waterbury COMFORTROL By/Pass Heating *sells faster* because it's *better!*



HOW "COMFORTROL" WORKS: The Waterbury By/Pass System divides the air returning from the rooms, heats part of that air . . . mixes hot and cold together again in just the right proportions called for by both outside and inside thermostats . . . then sends a constant flow of warm—not hot—air back into every room in the house.

WORLD FAMOUS

Waterbury

FURNACES AND AIR CONDITIONERS

The WATERMAN-WATERBURY Company

MINNEAPOLIS 13, MINN.

Modern Showroom Creates Selling Atmosphere

(*Continued from page* 88)

modeled for two apartments which we now rent at $140 per month.

Showroom Planned for the Future

Perhaps the outstanding feature of our new showroom is the "twin" arrangement. It has an entrance in the front and one at the side; wiring is done for each half separately, and into separate control panels. In each side wall is an individual gas fired heating unit with 35,000 Btu input and a 1½ ton air conditioning unit. There is a single supporting pillar in the center of the room.

Our original idea behind this arrangement was that at some future date we might wish to lease half our showroom space to a small specialties shop or beauty salon if we found we did not need the room. It would become a simple matter to build a partition through the center of the room, and all wiring, entrance, heating and cooling details would be already taken care of.

The individual heating and air conditioning units, built into the walls and visible, also provide us with good working models to show our prospective customers.

Slanted Windows Eliminate Reflections

The front windows are tilted inward at the bottom, and the two 14 ft front panels are slanted toward the front door in the center. The door is set in 2 ft from the outside corners of the showroom front. This arrangement eliminates reflections from the windows; when cars drive by, the occupants can see our displays without interference from windshield and other reflections. A 2 ft marquee across the front and sides also shades the sun.

The 35 ft front is almost entirely window area; 8 ft high glass panels cover 28 ft of the frontage and wrap around to provide 6 ft more window space on each side. Both sides of the entrance are covered with modernistic pre-cast stone facing.

Blond plywood paneling is used on the inside walls, because it is attractive and easy to maintain. The floor is covered with yellow, buff and brown asphalt tile complementing the walls. The ceiling is ivory acoustical tile.

The 28 ft window area in the front gives us plenty of display space for furnaces, fuel burners, air conditioners and water heaters. The heavier pieces are displayed on caster mounted platforms which can be wheeled easily to any part of the showroom.

Effective Lighting Sets Off Displays

Display lighting includes three spotlights in the ceiling just over the windows on each side of the entrance. These lights can be trained on specific pieces of equipment. There are two more outside, hanging from the front marquee on each side of the entrance. These lights can be aimed through the window at displays or trained on the exterior of the building at night. The lighting design is varied frequently for advertising effect.

Everything which went into the showroom was top quality material which will last many years. Ceiling joists, which also form the outside overhang, are 2 × 10 in. beams; there is a thick layer of insulation in the roof. Windows are heavy plate glass with extruded aluminum joints in front. Side windows have steel casement cranks.

What Are the Results?

What can such a showroom be expected to do for a heating dealer? Is this investment justified? Would we do it again, under the same circumstances?

I can't honestly say that having a nice looking showroom alone is the key to heating-cooling sales success. But in the year our new showroom has been open, there have been countless instances in which having an attractive, comfortable place to talk to prospects has been a distinct advantage. This is especially true in talking to lady customers and — since 95 percent of our work is furnace replacement or heating-cooling ductwork in older homes — we find ourselves talking to many lady customers.

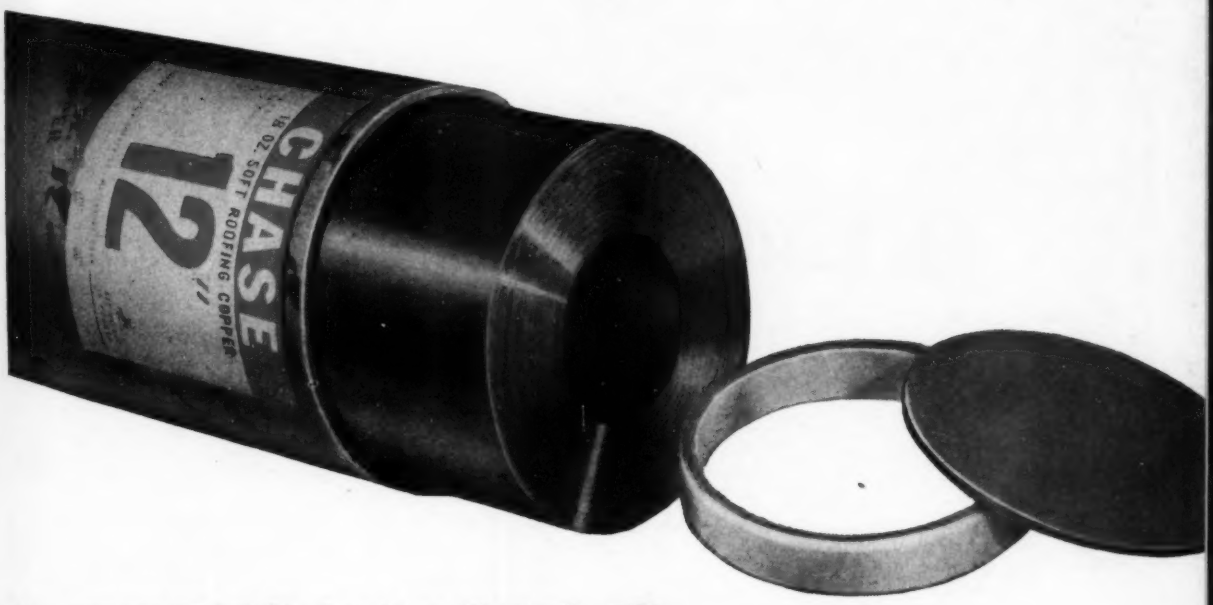
Probably the best illustration of the advantage of the new arrangement is a comparison of the showroom with our previous location, which was typical for the small heating dealer. There was little room for anything but a couple of furnaces, a cluttered desk and a single chair. If we were talking to one customer when another came in, there were no accommodations for the newcomer.

Now with plenty of browsing room, interesting displays and well dispersed literature, we are much less likely to have a customer walk out on us while we are taking with someone else, or lose our first prospect while attempting to be courteous to the second. The investment was certainly justified, if only because of the downtown rental we have saved. Now we can devote more outlay to advertising and sales promotion. The apartments we rent provide income that aids in reducing our building overhead.

We have made the most of our new showroom from an advertising standpoint. Pictures of it are used in our newspaper advertising, and a line engraving of the building goes in our classified telephone directory ads. It gives us an advertising edge — something to feature besides just what we're selling. The invitation "Come in and visit our new showroom" gives a new approach to the prospect.

CHASE® ANNOUNCES:

ROLL COPPER IN CARTONS



Now you can get bright, clean 16-oz. Chase roll copper in the most convenient package ever offered! All standard widths from 6 inches to 20 inches are individually packaged in strong, compact, *practical* containers that are a cinch to handle and store. You can get the new containers of 16-oz. roll copper in 500-pound crates or on 2000-pound skids.

And, of course, the roll copper is standard Chase top-quality! Perfectly uniform in temper and gauge. Bright, clean, with a smooth, even surface.

Call the Chase warehouse near you for fast delivery.

LOOK AT THESE ADVANTAGES!

- **SAFE, EASY HANDLING**—recessed ends protect fingers. Cylindrical shape can be rolled easily.
- **EASILY STORED**—Container is extremely compact.
- **SIMPLIFIES INVENTORY**—All the information you need is printed in *B-I-G* lettering.
- **PROTECTS CONTENTS FROM DAMAGE**—Edges of coil kept free from dents. Surface of coil remains unmarred. Coils STAY ROUND! Copper stays dry, clean and bright.
- **NO ACCIDENTAL UNWINDING.**
- **CHASE'S TRADEMARK MEANS TOP-QUALITY.**

Chase®

BRASS & COPPER CO.

WATERBURY 20, CONNECTICUT • SUBSIDIARY OF KENNECOTT COPPER CORPORATION

The Nation's Headquarters for Brass & Copper

Albany†	Chicago	Detroit	Los Angeles	New York	St. Louis
Atlanta	Cincinnati	Grand Rapids†	Milwaukee	Philadelphia	San Francisco
Baltimore	Cleveland	Houston	Minneapolis	Pittsburgh	Seattle
Boston	Dallas	Indianapolis	Newark	Providence	Waterbury
Charlotte†	Denver	Kansas City, Mo.	New Orleans	Rochester†	(sales office only)

LEADER IN THE RESIDENTIAL AIR CONDITIONING WARM AIR HEATING SHEET METAL CONTRACTING FIELD

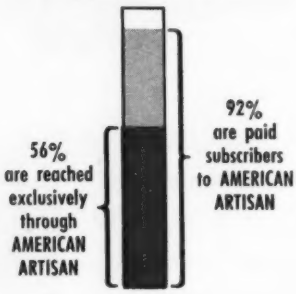
1 Reaches the greatest concentration of buying power!

2 AMERICAN ARTISAN excels in editorial content . . . all of it practical, authoritative, and designed to help readers expand their markets, handle work more efficiently.

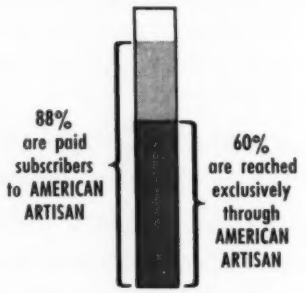
3 AMERICAN ARTISAN leads in advertising volume. Year after year it is used by more advertisers than any other book in this field.

4 AMERICAN ARTISAN provides the only FULLY paid (ABC) circulation in the field. Its superior editorial content attracts and holds the type of reader who means the most to you.

KEY Warm Air Heating Dealers



KEY Sheet Metal Contractors



YOU who sell to the Warm Air Heating, Residential Air Conditioning, Sheet Metal market know this: The larger dealers and contractors — those who as a group handle 80% or more of the available business — are your most profitable outlets. That's basic!

Basic, too, is American Artisan's paid circulation which provides the most thorough coverage of these KEY factors.

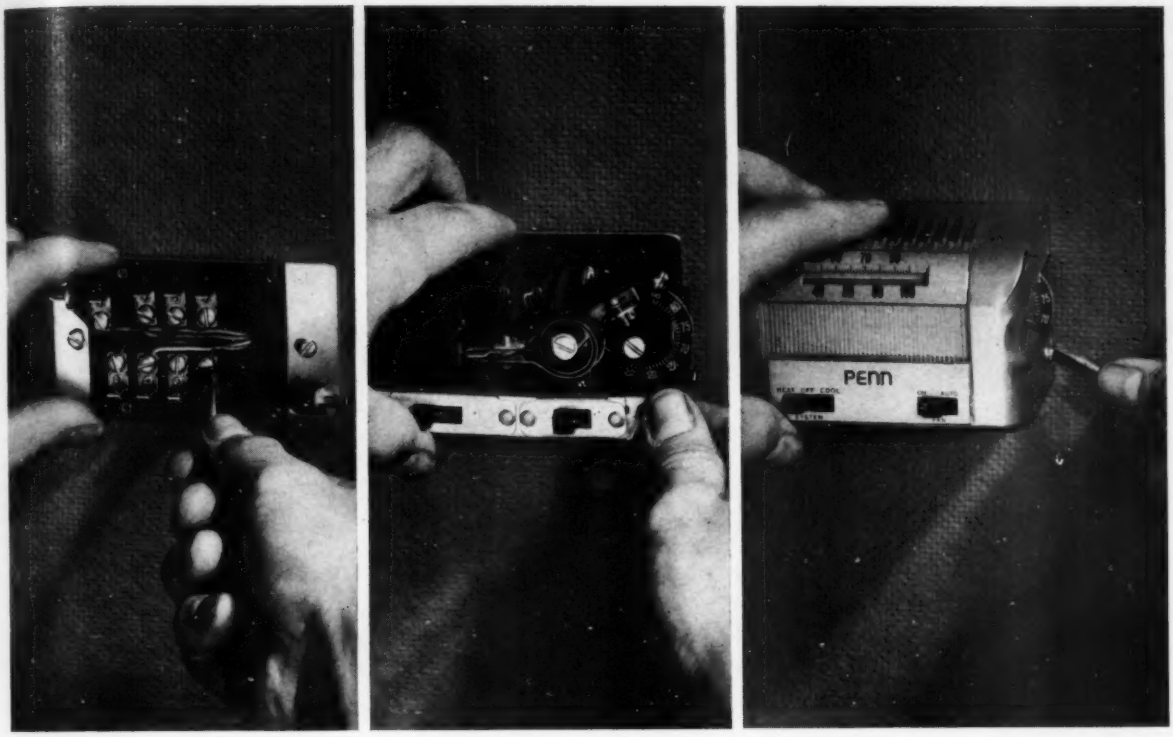
Continuous field research furnishes proof on that score, with the same "pattern of preference" charted above holding true for Warm Air-Sheet Metal WHOLESALERS. 87% are paid subscribers; 47% are reached exclusively through American Artisan.

Aside from delivering the field's most profitable circulation, American Artisan offers advertisers numerous other advantages. Investigate them . . . and, on the basis of FACTS, your first choice will be American Artisan.

KEENEY PUBLISHING . . . 6 N. Michigan, Chicago

ABC AIR CONDITIONING HEADQUARTERS ABP

NEW YORK: 1734 Grand Central Terminal CLEVELAND: 737 National City Bank Building LOS ANGELES: 672 S. LaFayette Park Place



1. Two screws secure mounting base to wall. Then connect wires to terminals.

2. With the cover removed, just push the room thermostat on mounting base.

3. Place cover on thermostat and secure it by tightening two screws . . . one on each end of mounting plate.

3 SIMPLE STEPS TO INSTALL NEW HEATING-COOLING ROOM THERMOSTAT

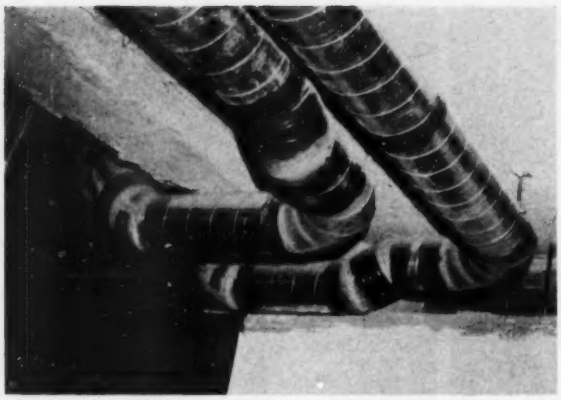
save time, labor and money

No fuss . . . no critical alignment . . . no hard-to-get-at terminals . . . only the Penn heating-cooling thermostat is so easy to install! But, that's not all. Only Penn gives you "heat anticipation" to hold heating temperature within one-half degree of selected level . . . and, "cold anticipation" to assure closer control of cooling temperature and lowest relative humidity. Be sure the packaged air conditioning you sell and install is equipped with Penn automatic controls.

Penn Controls, Inc., Goshen, Indiana.

PENN AUTOMATIC CONTROLS

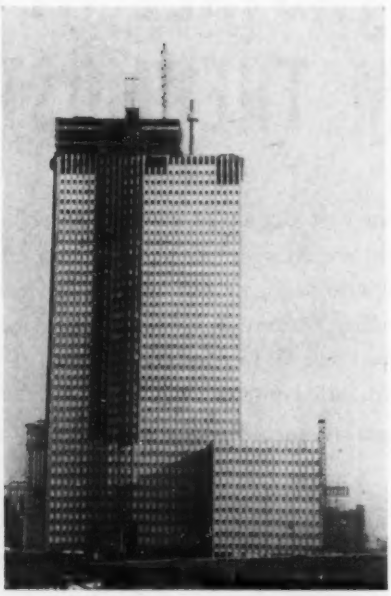
FOR HEATING, REFRIGERATION, AIR CONDITIONING, GAS APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES



HIGH PRESSURE ducts wind around structural beams and over low velocity distribution ducts to reach their discharge locations

ELBOW SECTION is fastened to a fan housing. Each elbow on the larger ducts used turning vanes as shown to smooth out the air flow around the sharper turns

25 *Miles* of Ductwork Serve New Prudential Building



Now nearing completion, Chicago's newest skyscraper will be completely air conditioned. Here are a few examples of the ingenuity required for installation of 41 stories of air conditioning, ventilating and exhaust ductwork which serve the huge structure

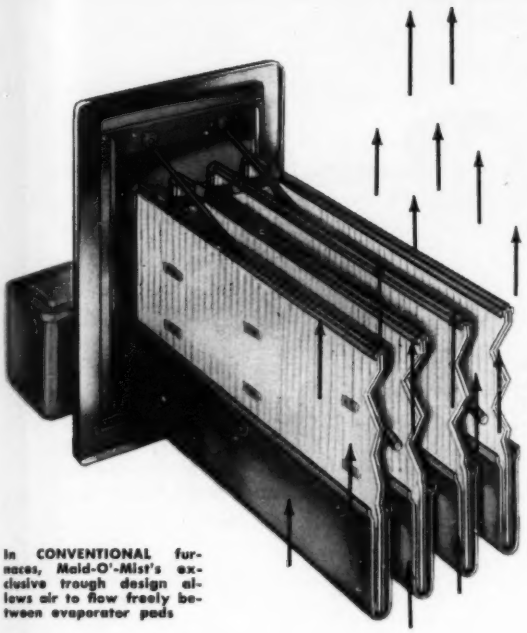
INSTALLATION OF a ventilation system for a large commercial building presents a multitude of problems which frequently tax the resourcefulness of many sheet metal contractors. One such installation now underway is the Mid-America home office building of the Prudential Insurance Co. of America in Chicago. Teaming up to install the ductwork for the air conditioning, ventilation and exhaust systems in this 41 story office building are W. A. Kuechenberg, president, R. B. Hayward Co. and P. W. Olmen, president, Jamar-Olmen Co., both of Chicago.

System Calls for 900 Tons of Galvanized Steel

The first eight floors of the building will be occupied by the offices of the Prudential Insurance Co. The remainder of the completely air conditioned building will be rented. It is estimated that the initial ductwork for the first eight floors, plus that required to complete the fan

(Continued on page 100)

Conventional or Counter Flow!



In CONVENTIONAL furnaces, Maid-O'-Mist's exclusive trough design allows air to flow freely between evaporator pads

MAID-O'-MIST

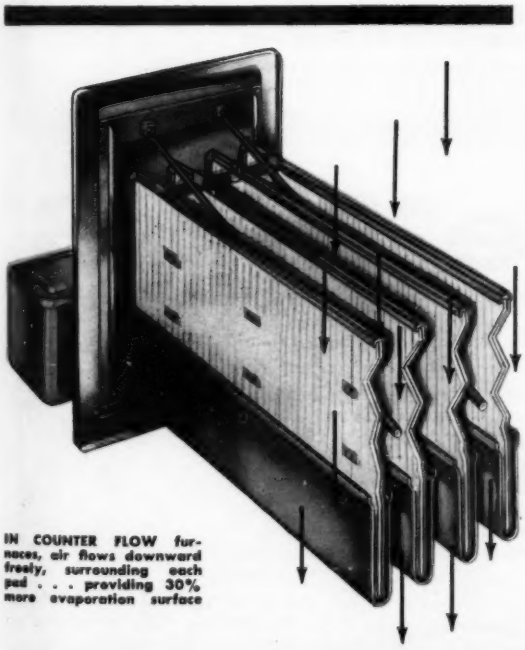
CONVECTOR HUMIDIFIER

is the ONLY standard unit that fits BOTH TYPES of warm air furnaces

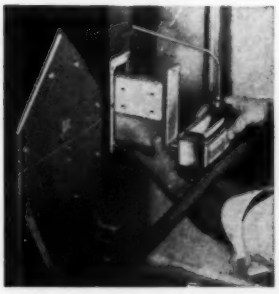
This versatile convector humidifier is ideal for the small plenums of all modern warm air furnaces . . . conventional, counter flow and year-around air-conditioning units.

Unlike ordinary warm air furnace humidifiers, the Maid-O'-Mist has no flat bottom to block the flow of warm air. Maid-O'-Mist's exclusive design—individual ⅜" copper water troughs spaced 1" apart—allows unrestricted air flow between patented evaporator pads . . . provides 30% more evaporating surface necessary in short-cycle modern heating.

Maid-O'-Mist's design makes installation easy. There's no fitting or fastening to the back of the plenum. The unit is entirely supported by the flange frame in front.



IN COUNTER FLOW furnaces, air flows downward freely, surrounding each pad . . . providing 30% more evaporation surface



FOR COUNTER FLOW WARM AIR FURNACES

Maid-O'-Mist, because of its narrow trough design, can be installed on either side of counter flow furnaces having a minimum air passage of 3 inches.

FOR CONVENTIONAL WARM AIR FURNACES

Installation is fast and easy. Just cut opening in plenum and make water connections. 13 sizes available with evaporation capacities of 1 to 10 gals. per day.

60% LESS AIR RESTRICTION IN PLENUM — **30%** MORE EVAPORATION AREA — **50%** LESS INSTALLATION TIME

Get full information on these competitively-priced units from your jobber or write for Bulletin 701-B

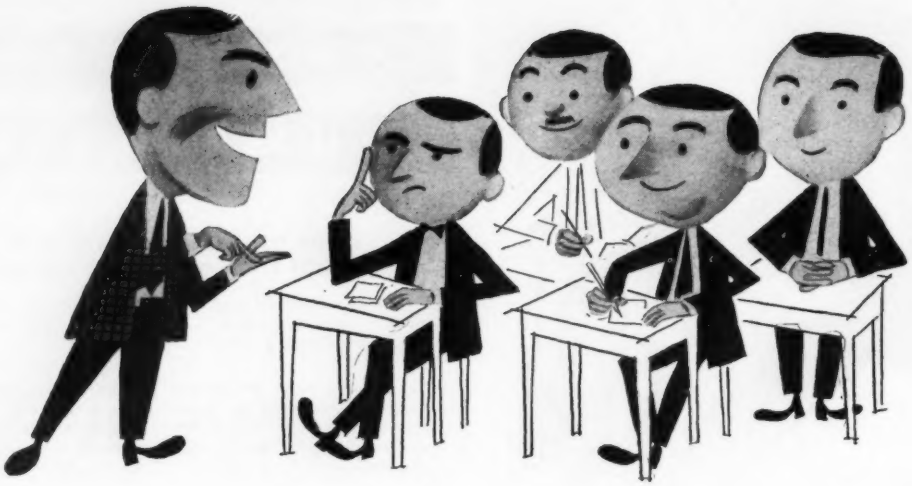
MAID-O-MIST Inc.
HEATING SPECIALTIES

AUTOMATIC HUMIDIFIERS . . . . . AUTO-VENTS
WATER LINE CONTROLS . HEATING SPECIALTIES

MAID-O'-MIST, Inc.

3217 NORTH PULASKI ROAD . CHICAGO 41, ILL.

Profit by professional sales training!



"Mr. B" goes to school—and profits. **BRYANT** offers organized field and factory schools for dealers—with full-time, professional instructors in sales and service.

be "Mr. B"

(AUTHORIZED BRYANT HOME COMFORT DEALER)

Only "Mr. B"—the Bryant Home Comfort Dealer—has *all 8* of these selling assets to build his business BIG:

1. A name customers know and want
2. The most complete line of automatic heating, air conditioning, water heating
3. Quality equipment for every market
4. Exceptional distributor service
5. Professional sales training
6. Personalized selling tools for you
7. National advertising featuring you
8. Co-op "Mr. B" ads for local papers

For bigger profits now, for a secure and prosperous future—see your Bryant Distributor. Ask him about Bryant's big "Mr. B" action program, and how it can make sales and money for you!

bryant®

AUTOMATIC HEATING
AIR CONDITIONING
WATER HEATING

Char-Gale

AROUND THE CLOCK DELIVERIES

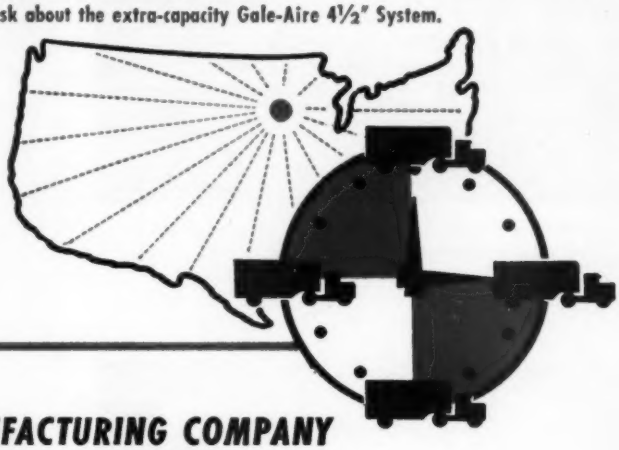
Bring you prefabricated ducts and fittings . . . when you want them at prices you want to pay

Backed by 300,000 Sq. Ft. of Productive Capacity. From the huge Char-Gale factory, you can be sure of adequate supplies of the following items:

Aluminum Fittings • Aluminum Pipe and Elbows • Aluminum Sheets • Galvanized Fittings • Galvanized Pipe and Elbows • Galvanized Sheets • Complete Small Pipe Systems; both Aluminum and Galvanized • Seamed Heat Tubing • Button Lock Heat Tubing • Humidifiers • Rain Goods • Registers—Complete Line, both Perimeter and Conventional, including Floor Diffusers • Baseboard Diffusers in 2, 4 and 8 foot lengths.

Rapid, nation-wide delivery service by Char-Gale's own fleet of trucks means prompt movement of Char-Gale products direct to you. It reduces your inventories to save you money and space. And you benefit from ordering mixed truckloads.

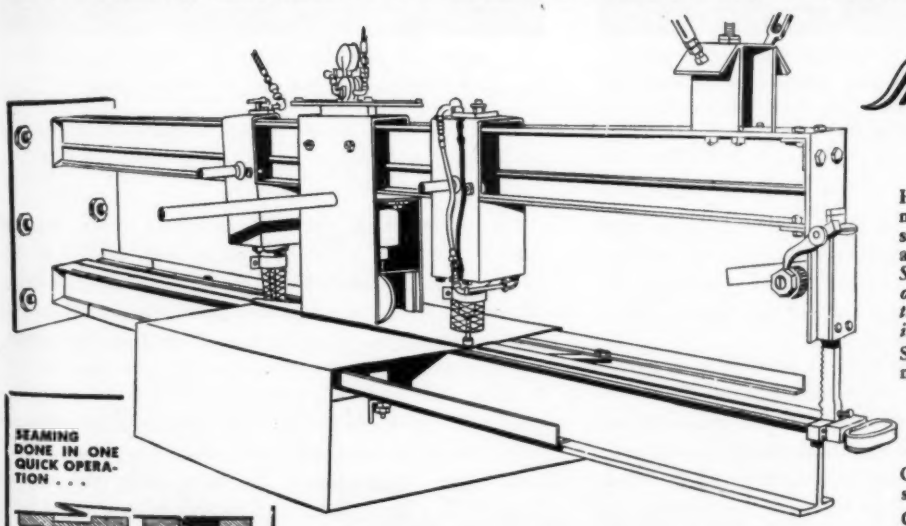
Ask about the extra-capacity Gale-Aire 4½" System.

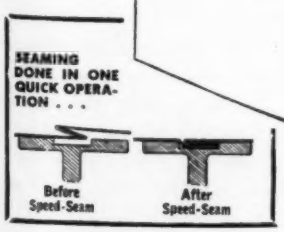


Char-Gale MANUFACTURING COMPANY
ANOKA, MINNESOTA

Announcing MECHANICAL POWER SEAMING *for* DUCTS!

. . . *are you interested in* MORE PRODUCTION SPEED? . . . PERFECTLY SMOOTH SEAMS? . . . QUIET OPERATION? . . . *SURE* YOU ARE! BETTER INVESTIGATE . . .





Speed Seam

Here at last is a practical method of getting a perfectly smooth seam on ductwork in a matter of seconds! *The SPEED SEAMER will turn out over six times more work than your present hand seaming methods!*

SPEED SEAMER needs no more shop space than the "I" beam you now use, and it will easily and quickly handle ducts up to 10′ in length and 5′ in width.

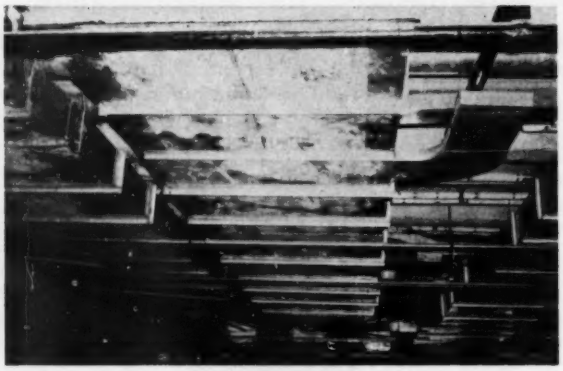
Operates on compressed air system.

Get the facts today, for more profit tomorrow . . . Write

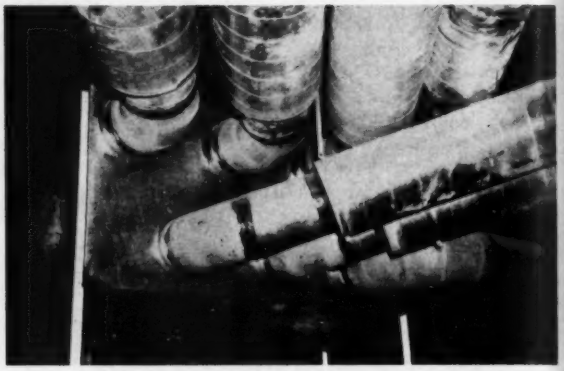
SPEED-SEAM CO. 820 North Wolcott Ave., Chicago 22, Ill.

Skyscraper Served By 900 Tons of Ductwork

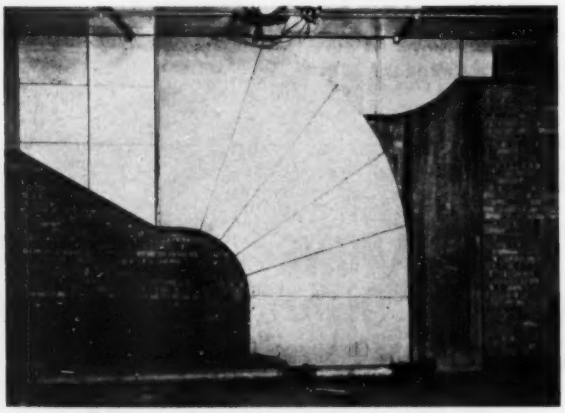
(*Continued from page* 96)



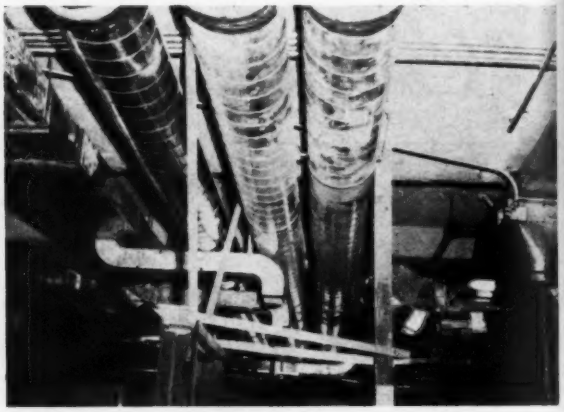
CEILING OF DUCTWORK forms supply, return and exhaust systems



GOOD ENGINEERING shows up in placement of noise reducing sleeves close to blower discharge headers



HORIZONTAL DUCT against the ceiling is turned to parallel the wall before entering the floor below; one branch of the duct continues to the right to supply the far area.



MAZE OF DUCTWORK is made up of high and low velocity ducts and return intakes (right)

rooms on the remaining 33 floors with the supply and return ducts terminating at the elevator corridor will require 1,200,000 lb of galvanized steel. To complete the duct systems required by the tenants of the upper 33 floors another 600,000 lb will be needed.

In addition to the approximate 1,800,000 lb of galvanized steel for supply and return duct systems, 65,000 lb of black iron will be used for the exhaust systems from numerous kitchens to be located throughout the building.

Most of the fan rooms are located to serve the floor upon which they are located as well as the floor above and below. This arrangement provides the best air and duct distribution plan with minimum space for the equipment. One fan room at the top of the building serves seven floors.

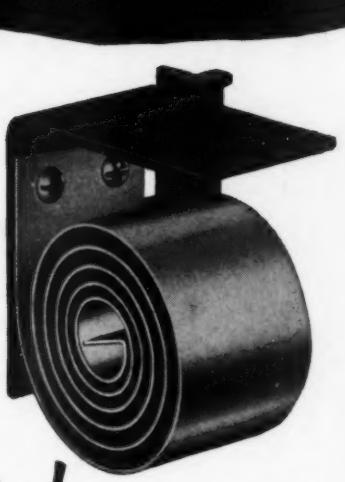
Fabrication of the ductwork was done in the shops of each of the sheet metal contractors and trucked to the building site. To reduce the necessity for on-the-job fabrication of fittings, over 150 shop drawings were prepared by the engineering departments of the two contractors.

The quantity of ductwork required to serve this modern building practically fills the ceiling at the fan room discharge points. In fact, had high velocity, high pressure supply ducts not been used, the ceiling areas would have been inadequate at times. The heavy duty duct system is of 20 gage zinc coated steel conduit with a spiral lock seam. Velocities handled in this system will range between 3000 and 4500 fpm, depending upon the size of the con-

(*Continued on page* 104)

There's one **BIG** difference in furnaces today...

and this is it!...



Perfection with *Regulaire*...does what no other furnace can do!

Your stock in trade is *comfort!*

That's why we are sure you'll be keenly interested in the simple device shown above. It is the "brain" of Regulaire*—the greatest heating invention in over 30 years.

This little thermo-coil operates, automatically, a regulating vane in the blower to insure smooth, silent, constant warm air circulation throughout every room to give your customers wall-to-wall, floor-to-ceiling comfort *all the time*. With Regulaire, floors can't get cold, hot and cold blasts are eliminated, and there are no chilly intervals. That's what furnace buyers want.

And they want the fuel savings you can give them with "Bonus Fire," an extra stage of fire between Pilot and High Fire—a real "plus" originated by Perfection.

For you too, Perfection with Regulaire makes the BIG difference. It's service-free . . . virtually eliminates call-backs . . . and makes *your* selling job easier. So, this year, *increase your share* with Regulaire and Perfection's "Bonus Fire." Perfection Industries, Inc., (formerly Perfection Stove Co.) 7616-G Platt Avenue, Cleveland 4, Ohio.

YOUR HOME DESERVES A

Perfection

AUTOMATIC HEATING • AIR CONDITIONING

*Pat. Pending

These typical properties show why Crucible 430 stainless was a good *choice for the Murray worm drive clamp.*

Tensile Strength — a. Room Temperature — 75,000 psi. b. At 1700F — 3500 psi

Yield Strength — 40,000 psi

Elongation — 30%

Hardness — 160 BHN

Endurance Limit — 40,000 psi

Creep Strength — Stress for 1% elongation in 10,000 hours at 1300F-1300 psi

Resistance to Scaling — Suitable for continuous service to 1600F.

the finest products wear a STAINLESS *label...*

When you label a product *stainless steel* it means lasting dependability . . . good looks . . . and resistance to wear or corrosion.

That's why the Murray Corporation, Towson, Maryland, chose Crucible stainless for the worm drive hose clamps shown above. These clamps need the high strength, wear and corrosion resistance that only *stainless steel* can provide.

Stainless has other advantages, too. Its high creep and fatigue strength . . . heat resistance . . . and excellent workability may be just what you're looking for.

At Crucible stainless steels are *prescription-made* by steelmen with over a half century of experience in *special purpose* steelmaking. They'll welcome the opportunity to help you make the most profitable use of stainless for your products. *Crucible Steel Company of America, Henry W. Oliver Building, Pittsburgh 22, Pa.*

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

EVERYBODY'S TALKING ABOUT THE

NEW

LARGE ECONOMY SIZE

International Economy® Big-Boy

Installation cost is the key to profits in any commercial-size heating system. And that's the big story on the new Economy® Big-Boy — easy installation! In the new Economy® Big-Boy you're working with the smallest commercial unit on the market *for its capacity*. Everything about it is compact, efficient . . . designed to save you time, labor and costly call-backs.

Here's why they'll buy

New Economy Big Boy Furnaces

Models OL-336, OL-448

- Occupies Little Floor Space — 54" x 69" x 70"
- Firing Rate, 420,000 and 560,000 Btu/Hour
- Bonnet Output, 336,000 and 448,000 Btu/Hour
- Handsome Heavy Gauge Cabinet
- Convertible from Oil to Gas

The Finest in Home Heating Since 1842 . . . Complete Cooling, too!

INTERNATIONAL Heater Co., Utica 2, N.Y.

WHAT'S REALLY GOT 'EM TALKING...

. . . is the **COMBUSTION CHAMBER** that's completely factory-assembled and already *in* the Heating Element . . . no fussing with firebrick.

. . . the **HEATING ELEMENT** itself — quick to erect, one piece, gas-tight — only 27" wide, 66" high and 71" long over-all, as shipped. Beauty of it is, it will pass through any standard doorway. Think of the time and trouble that can save!

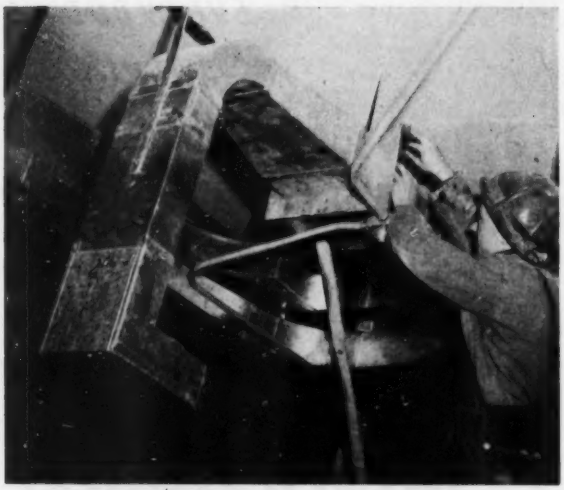
. . . then there's the **ALL-METAL BASE** under the unit, making it easier to assemble, easier to level — tighter, cleaner.

. . . and — a very important design feature — the **BLOWERS** may be placed on *either* the right or left side, to fit any unusual condition. ***Like to hear more?***

See your distributor — or write: Dept. A-755

Ingenuity Builds Skyscraper Ventilation System

(*Continued from page* 100)



DUCT HEATERS are added for physical examination rooms of the dispensary to provide higher temperatures than required in surrounding rooms

duit and its purpose; branch ducts of course operate at lower velocities and pressures than the main supply ducts.

Sturdy Connections Minimize Leakage

Round conduit for the high velocity system was supplied in 12 ft lengths and trimmed to the dimensions required for the run. Its diameter varied with the air volume required, ranging from 3 through 20 in. Where main supply conduit connections were called for, welded joints were used to cut air leakage losses to minimum. The specifications permit no more than 10 cfm air leakage at an 8 in. static pressure per conduit riser.

Branch conduit connections were mechanically fastened with drive or twist screws, then taped and covered with a synthetic rubber sealing compound.

Adequate Air Motion Maintained

The distribution pattern for the high velocity conduit system calls for running main supply ducts to the building's perimeter where branch conduit takes off at each window. The branch duct delivers filtered conditioned air to an auxiliary unit which tempers the incoming air with the room air. This auxiliary unit is capable of supplying or removing heat as required. No mechanical equipment is needed to mix induced air with room air as the discharge velocity of the supply air is sufficient to maintain adequate air motion within each area.

The specifications call for 1 in. glass fiber sound absorbing insulation inside each high velocity, high pressure main conduit for a distance of not less than 24 lineal ft after each fan or reheater coil.

All interior rooms will be conditioned by air supplied from the low velocity, low pressure duct system, where velocities are below 1200 fpm. However, the specifications require that all rectangular ducts use 1 in. glass fiber sound absorbing insulation for a distance of 30 lineal ft or 4 ft past the first ceiling supply outlet or branch duct.

Specifications Show Magnitude of Job

The quantity of air to be handled through both the high and low velocity systems is 836,559 cfm. The estimated length of ductwork is 25.5 miles. There will be 3750 ceiling diffusers and 2621 auxiliary units at the windows. Eighty-six centrifugal blowers are used, 76 for the low velocity supply and exhaust systems, and 10 for the high velocity systems. A point relative to the horsepower requirements of low pressure systems vs high pressure systems is interesting to note — 845 hp is needed for 76 low pressure blowers while the requirement is 675 hp for 10 high pressure blowers.

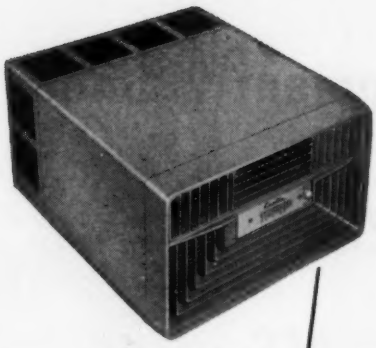
Fabrication of the ductwork followed specifications designed to give maximum air delivery at the lowest pressure loss and greatest rigidity to the wide sections of the duct. All turns were limited to a radius not less than twice the width of the duct up to 12 in. wide and not less than the width of the duct for sizes wider than 12 in. Turning vanes were required for all large ducts. The full area had to be maintained whenever it was necessary to change the duct shape to coincide with building structural features.

Angle Iron Braces Reinforce Ducts

Reinforcement of ducts between 24 and 40 in. wide was accomplished with $1 \times 1 \times \frac{1}{8}$ in. angle iron on 4 ft centers. For ducts between 41 and 60 in. wide, angle iron bracing of $1\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{8}$ in. on 4 ft centers was used. Ducts over 61 in. wide used $2 \times 2 \times 3/16$ in. angle iron bracing on 4 ft centers. The angle iron bracing was fastened to the duct with rivets on 9 in. centers. An exception to the 4 ft spacing for the braces was made where beams forced a change in the brace location, the limit permitted being a maximum of 2 ft beyond the original spacing required.

All branch ducts in the low pressure system have their own volume control dampers which are adjusted by a manually operated quadrant or worm drive regulator where the ceiling covers the branch takeoff.

To complete the air distribution system, washable filters are used in banks to permit a constant air volume supply to the fan at a low resistance to air flow. Air flow resistance gages are installed for periodic inspection without the serviceman having to enter the filter compartment. Architects and engineers are Naess and Murphy; general contractor is George A. Fuller Co.



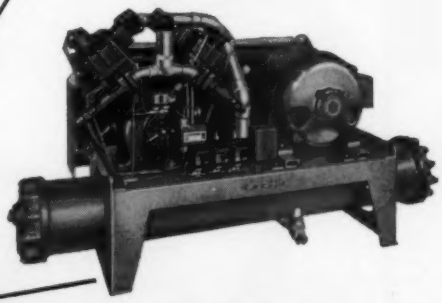
Window Air Conditioners

Packaged Air Conditioning units—2 to 20 tons

More jobs... More profit!

WITH THIS

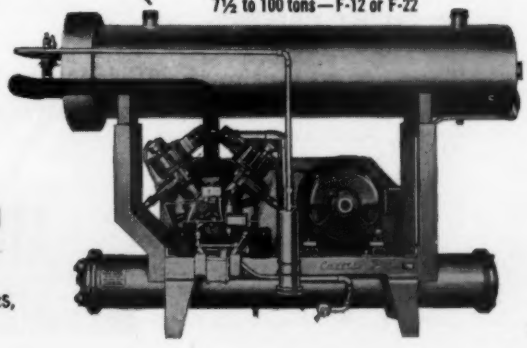
complete Curtis LINE



Condensing units up to 100 tons—F-12 or F-22

Multi-Zone Units—serving 2 to 8 zones

Packaged Liquid Chillers—7½ to 100 tons—F-12 or F-22



You'll sell more jobs, and make more profit, with this well-rounded Curtis line. Curtis equipment sells readily because it is backed by one of the oldest and most respected names in the business. Curtis products are presold for you by hard-hitting national advertising in *Saturday Evening Post, Time and Newsweek*, plus many national business and trade magazines.

WRITE TODAY for information on how you can obtain a Curtis direct factory franchise.

Curtis REFRIGERATING MACHINE DIVISION
of Curtis Manufacturing Company
1982 Kienlen Avenue, St. Louis 20, Missouri

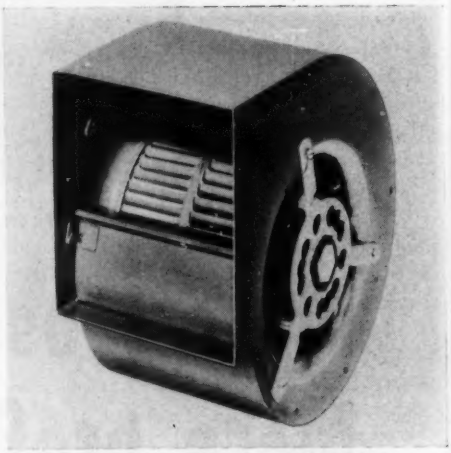
Other Curtis Products: INDUSTRIAL AND AUTOMOTIVE AIR COMPRESSORS, AUTO LIFTS, CAR WASHERS, AIR HOISTS

829

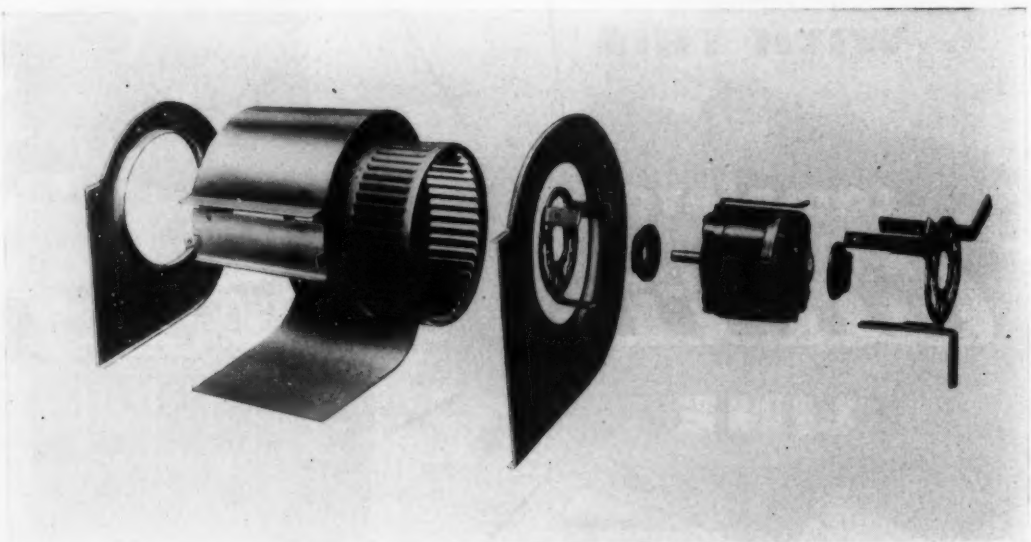
Many Original Equipment Manufacturers are

Changing to Direct Drive Blowers

Buying MORRISON PARTS and building their own blower assemblies... or buying Morrison Complete Assemblies.



SPEED CONTROL OPTIONAL



Morrison Direct Drive Blowers . . .
require less space,
need no unnecessary accessories,
reduce vibration.

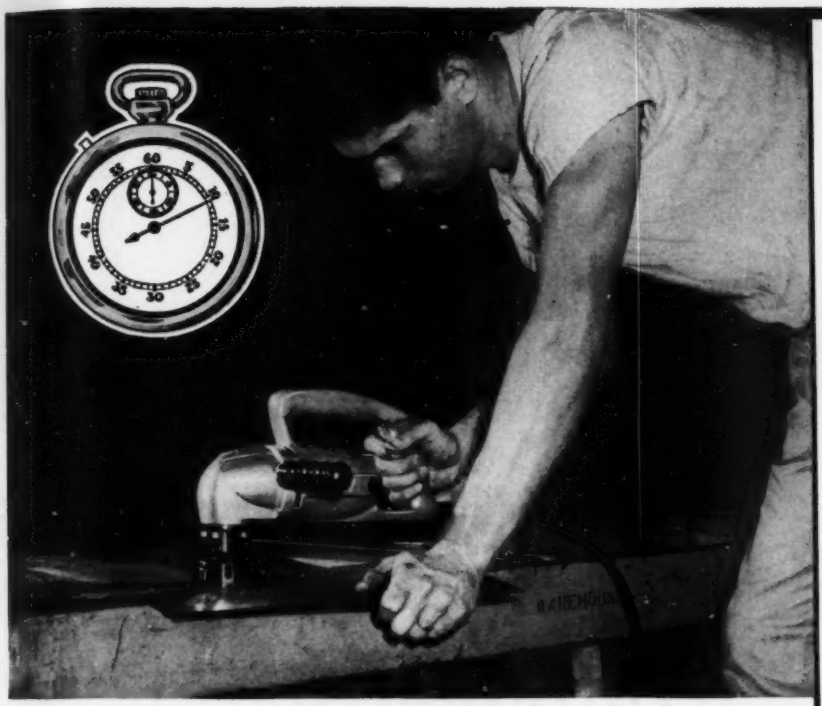
They assure maximum efficiency and quiet operation at a *substantial saving in cost.*

Buy MORRISON PARTS and make your own assemblies, or buy the complete assemblies. In either case, manufacturers of Original Equipment know that MORRISON correct design and extra heavy construction is unsurpassed. *Better Investigate the Direct Drive.*

• ***Write for Literature TODAY***

MORRISON PRODUCTS Inc.

16816 Waterloo Road • Cleveland 10, Ohio



New SKIL Shear Sweeps Field in Actual Comparison Tests!

SKIL Model 231 Wins 5 Trials Out of 5 Outperforms, Outproduces All Others

Actual tests prove what many sheet metal men are learning for themselves. The new SKIL 231 Shear is far superior to all others on the market. These tests show the speed, power, and control that are making the SKIL Shear so popular on every job . . . in every shop.

Here are actual results of impartial tests of the SKIL Model 231 Shear and competitive brands. Shown are performance figures for SKIL, Brand A, and Brand B.

Test 1:

25" Trial Cut of 12 Gauge Metal
Model 231.....9.2 seconds
Brand A.....15.3 seconds
Brand B.....12.0 seconds

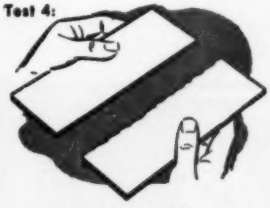
Test 2:

Cutting Right and Left Hand Circles
Model 231.....22.0 seconds
Brand A.....24.0 seconds
Brand B.....22.2 seconds

Test 3:

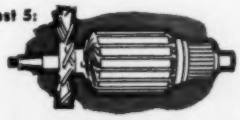
Small Diameter of Circular Cuts
Model 231.....1½"
Brand A.....2"
Brand B.....(right hand) 2½"
(left hand) 4½"

Test 4:



Cleanness of Cuts
Model 231.....Excellent
Brand A.....Good
Brand B.....Poor

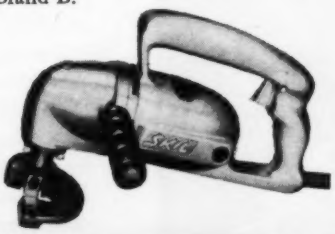
Test 5:



Power and Performance
SKIL 40% more powerful than Brand A and 33⅓% more powerful than Brand B.

SKIL SHEAR 231—Best All-Around

The results show that the 231 is the best all-around Shear on the market today. Faster, easier handling, more powerful! Features like the Contour Grip Handle at the rear of the tool make it a favorite with workmen who have tough cutting to do. Improved foot design keeps maintenance costs down for job superintendents. This is the shear you need in *your* shop. The SKIL Model 231.



FREE! Mail the Coupon for a Demonstration and a FREE Trial of the SKIL SHEAR Model 231! See How Much Faster, Easier-Handling this New SKIL Shear is on your Toughest Cutting Job!

Contact Your SKIL Distributor—or Your Nearby Factory Branch—for Complete Information.

SKIL
PORTABLE TOOLS

Made only by SKIL Corporation
formerly SKILSAW, Inc.
5033 Elston Ave., Chicago 30, Illinois
3601 Dundas Street West, Toronto 9, Ontario
Factory Branches in All Leading Cities

MAIL THIS COUPON!

SKIL Corporation, Dept. AA-73
5033 Elston Avenue, Chicago 30, Illinois

☐ I would like a demonstration and free trial.
☐ Please send literature on SKIL tools.

Name_____

Company_____

Street_____

City_____ Zone____ State_____

DISPLAY WINDOWS are geared for street traffic and ample off-the-highway parking space is provided in front. Shop is in the rear of the building

Dealer Sets Sights On Modernization Market

. . . to realize a $5000 increase in net profit which was largely credited to a continuous direct mail campaign employing testimonials from satisfied customers

CUSTOMER IS MET by courteous and efficient explanation of furnace installation from Mrs. Dittmar. Board at left displays testimonials; another shows before-and-after photos

WHEN R. A. DITTMAR became manager of Aire-Flow Heating Co., Yakima, Wash. he immediately set about increasing the firm's modernization volume. "This Old House," with perimeter heating sold on its savings became the theme song.

The result of the switch was an increase of better than $5000 in the net profit account. What's more, satisfied customers, with a little boost from the company's advertising campaign, are selling new modernization jobs.

Among the more effective tools the company has found are the testimonial letters which come in from satisfied customers telling about the greater comfort and the lower heating cost with the new perimeter heating system or the newly installed furnace. These endorsement letters are reproduced and sent to prospects as direct mail pieces.

Personal Touch Reinforces Mailings

Mrs. Dittmar, who is office manager at Aire-Flow, averages two hours a day on the direct mail campaign. On most mailings a personal note is added at the bottom of the letter carrying the testimonial, or a personal letter accompanies it.

(*Continued on page* 112)

Design fundamentals of the

ALL-AIR HIGH VELOCITY distribution system

By F. J. KURTH | *Vice President of Engineering*

Anemostat Corporation of America

A national survey reveals that today, more than ever, engineers are studying, learning and using high velocity-high temperature differential air distribution. Here is a brief discussion of the advantages of the all-air high velocity system over conventional and mixed cycle (air and water) systems.

1. No Coils — No Clogging — No Odor—There are no coils in the all-air high velocity units. Damp coils collect lint and emit dank odors, and the coils must be cleaned periodically.

2. No Individual Fans — Filters — or Electric Motors — The all-air units operate entirely with air which is processed in the main equipment rooms. The 100% induction units utilize the kinetic energy of the high velocity air to mix primary air with the room air.

3. No Conflict of Trades—The all-air units are installed by the sheet metal trades only.

4. More Effective Use of Outside Air in Spring and Fall—More primary air is delivered to the all-air units than to induction coil units. This allows the engineers to operate in the Spring and Fall on outside air and thereby save refrigeration.

All-air high velocity units offer scientific air diffusion. Each high velocity unit is provided with an aspirating or high induction type air diffuser which is scientifically designed to diffuse air without drafts. Each unit can be pressure balanced by an easy-to-operate balancing device and a calibrated orifice. In fact, the Anemostat all-air high velocity system can be balanced more accurately than other systems and in less than half the time required to balance a low velocity system.

High velocity units require practically no maintenance after installation. They have valves of the non-corrosive, die-cast, "rocket-socket" type, which are patented by the Anemostat Corporation of America. All units can be adapted for the following variations:

1. Single duct for zone control or individual thermostatic or manual remote control.

2. Dual duct for thermostatic control or any other type of control.

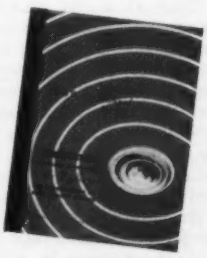
3. Single or dual duct units with the diffuser fastened to the unit, or remote from the attenuating unit.

4. Under-the-window, sidewall or ceiling type installations.

5. Can be provided with standard aspirating diffusers or 100% induction type diffusers.

6. Induction type units handle temperature differentials up to 33° below ambient.

Selection Manual Contains Data on High Velocity Units



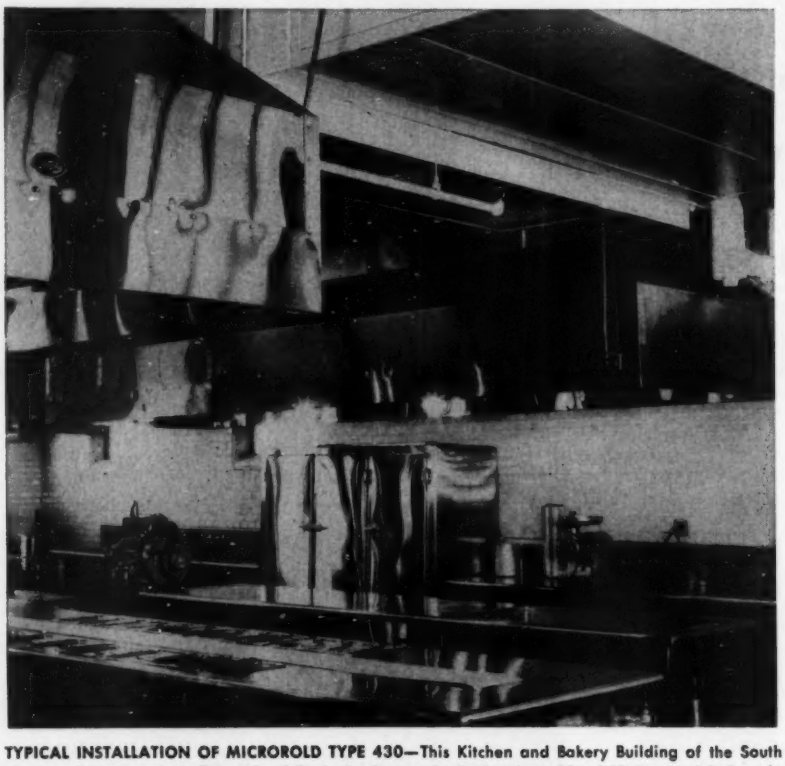
New Selection Manual 50 gives extensive selection and application data on high velocity all-air distribution systems. Write on your business letterhead for Selection Manual 50 to the Anemostat Corporation of America, 10 E. 39 Street, New York 16, New York.

Washington Steel News

PUBLISHED BY WASHINGTON STEEL CORPORATION, WASHINGTON, PA.

Stainless Steel Buyers:

SAVINGS OF $145 PER TON NOW POSSIBLE WITH *MicroRold*® STAINLESS STEEL



TYPICAL INSTALLATION OF MICROROLD TYPE 430—This Kitchen and Bakery Building of the South Carolina State Hospital, Columbia, S.C., is the largest institutional combined kitchen and bakery in the southeast. 18 gauge Type 430 stainless steel is used extensively in 17 exhaust and equipment hoods. They are designed for strength, appearance, and sanitation and were fabricated by Earl DeLay & Co. of Columbia, S. C.

7¼¢ Per Lb. Price Differential Between Types 430 and 302 Results in This Substantial Savings

By specifying MicroRold Type 430 stainless steel for suitable applications, stainless steel buyers can take advantage of the 7¼c per pound difference in base price between Type 430 and Type 302 stainless. A saving of $145 per ton merits consideration. Type 430 is a straight chromium-stainless with a nominal composition of 17% Chromium. During the Korean conflict, Type 430 was used extensively, due to government restriction on nickel-bearing stainless.

WIDE USE FOR TYPE 430

While Type 430 does not possess the same degree of corrosion resistance as Type 302, it has proven very satisfactory in a wide range of mild corrosion applications, both interior and exterior. It lends itself to a multitude of decorative and functional uses, combining all the advantages and qualities of stainless steel — beauty, strength, corrosion resistance, long life, workability and ease of maintenance. Considering the price advantage, with no sacrifice in quality when applied properly, stainless steel buyers will find MicroRold Type 430 a worthwhile material for an impressive number of stainless steel applications.

EXTRA SAVINGS

Washington Steel Corporation not only points out the savings and advantages that may be acquired through the selection of Type 430, but also the significant economies in its production of all stainless types. Special production equipment and methods produce controlled accuracy of gauge throughout length and width of the entire sheet; thus, MicroRold may be specified by decimal thickness (with tolerances as low as 3% average) instead of gauge number. By specifying MicroRold sheet rolled to the light side of the gauge range, purchase costs are reduced by the savings in weight. While this saving may not be apparent in every single sheet, weights will average less than the theoretical when bought over a period of time. **Your steel distributor can give you full information on how you can get the most out of your stainless steel dollar. He will gladly tell you the MICROROLD STORY.**

Type 430 Satisfactory For Mild Corrosion Applications

This straight chromium-stainless grade possesses desirable properties that recommend it for a diversity of applications under general atmospheric conditions. It is non-hardenable by heat treatment and is only mildly hardenable by cold working. It has moderate ductility, good forming and bending characteristics and can be drawn to a moderate degree.

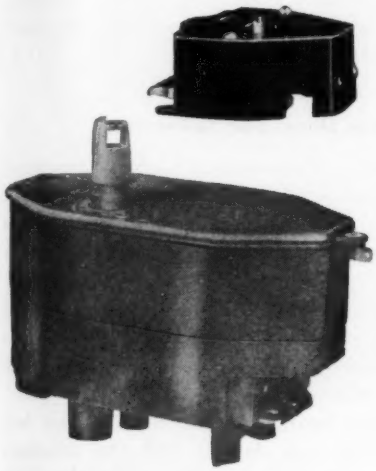
Brazing and soldering are easily accomplished, and except where resistance to high stresses is a major factor, it welds satisfactorily by the usual methods. Before fabricating MicroRold Type 430, it is advisable to consult our mill or distributor to make certain that it may be used successfully in your particular application.

Type 430 Good Insurance Against Shortage Of Nickel Types

Any restriction or curtailment of nickel-bearing stainless (as during the Korean Engagement) could have serious effect upon stainless steel fabricators. By making use of Type 430 wherever feasible, stainless fabricators can insure themselves against any unforeseen developments in the supply of stainless steel.

for More Profits

SELL DETROIT AUTOMATIC SPACE HEATER CONTROLS



ELECTRICAL

Thermostatic control Add-on takes up less space, fits any Detroit CRC-239 Float Valve. Automatically regulates flow of oil to keep room temperature constant.

The CRC-239-PE Add-on package contains all necessary parts for easy conversion: Room Thermostat, Electrical Add-on, Transformer, wire and staples. Talk to your Detroit Controls Wholesaler *Today* . . . or write for Bulletin 258.

MECHANICAL

Thermostatic Flame Modulator automatically regulates flow of oil to keep room temperature constant. Once the temperature adjusting knob has been set for desired room temperature, no further adjustment is necessary.

Entirely mechanical, the CRC-239-MP Add-on requires no electrical connections. It's easily and quickly installed! Fits any Detroit CRC-239 Float Valve.

Talk to your Detroit Controls Wholesaler *Today* . . . or write for Bulletin 237-A.

DETROIT CONTROLS CORP. manufactures a complete line of controls for the heating, air conditioning and refrigeration industries.

DETROIT CONTROLS CORPORATION
5900 TRUMBULL AVE. • DETROIT 8, MICHIGAN
Division of AMERICAN RADIATOR & STANDARD SANITARY Corporation

Representatives in Principal Cities • Canadian Representatives:
RAILWAY AND ENGINEERING SPECIALTIES, LTD.,
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AUTOMATIC CONTROLS for REFRIGERATION
AIR CONDITIONING • DOMESTIC HEATING • AVIATION • TRANSPORTATION • HOME APPLIANCES • INDUSTRIAL USES
Serving home and industry
AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL TILE • DETROIT CONTROLS • KEWANEE BOILERS • ROSS EXCHANGERS • SUNBEAM AIR CONDITIONERS

Testimonials Boost Modernization Sales

(*Continued from page* 108)

"We have found," Mrs. Dittmar said, "that we receive twice as many queries when we make the direct mail piece a personal one. This shows up particularly in phone calls. On a personalized mailing we will get an average of five phone calls per 100 mailouts. Where we use a printed folder or company furnished stuffer we rarely get a phone call on a mailing of 100."

Job sign and direct mail tie-in pays off. At every job, whether it is a new home, building, or a modernization installation, an Aire Flow Heating Company sign is put up.

Canvass Precedes Open House

Permission is obtained from the owner to show the installation to interested prospects in the neighborhood. The "open house" method works best, Mr. Dittmar says. A list of prospects within a radius of five or six blocks is made up and each prospect is sent an invitation to attend the open house. Ten days before the open house date, a salesman begins to work the area. This is the only house-to-house canvass work Aire-Flow Heating does.

"We have found," Dittmar says, "that we dig up some live prospects when we work the area around a job 'cold turkey.' The salesman makes up a list of people who say they will attend the open house. This list is cross checked the day of the open house and we use the phone during the afternoon and early evening as a reminder."

Photos Do Selling Job

Pictures play an important selling role. Photographs are taken of each major installation. Generally they are *before* and *after* shots. Enlargements of these pictures are posted on a board in the salesroom and reprints are supplied to salesmen for their kits. Small prints are made up and sent out with direct mail pieces. Mimeographed captions are fastened on the back of the small pictures with Scotch tape. These photographs cost around two cents each in lots of 100.

Satisfied customers and prospects that the salesmen feel will cooperate are given *prospect cards* and asked to furnish the names of three people who may be interested in a heating system. If a sale results from these leads, the person furnishing the names receives an automatic percolator or one of 15 other items as a reward. This is a promotion plan issued by the company manufacturing the heating system. Mr. Dittmar says he has received a number of good leads through the prospect cards. If one person sends in more than one productive lead, the company rewards him with a substantial gift valued in the $25 class. "We have had one customer," Mr. Dittmar notes, "who has been responsible for seven modernization jobs coming our way. A lady in a small town near here has sent us five jobs."

At first the gift offer folder and cards were mailed out. Later it was found that better results were obtained when the cards were given to satisfied customers or prospects by salesmen.

Direct Mail Opens Doors for Salesmen

Direct mail used as a conditioner has proved particularly successful. Before a salesman is assigned to work the prospect cards in an area, three direct mail pieces are sent out. First a testimonial letter or two with a personal note are mailed. They are followed up by a company furnished folder describing the heating system and giving figures on savings. The third mailing is another testimonial letter giving dollar and cents savings for the new system over the old.

"With these three mailings," Dittmar says, "we feel that the prospect is ready for the call. Our salesmen make most of the calls by appointment. The three advance mailing pieces make the job of getting an appointment much easier."

Each time a new live demonstrator furnace is installed on the salesroom floor, a notice is sent out in invitation form to every name on the prospect list.

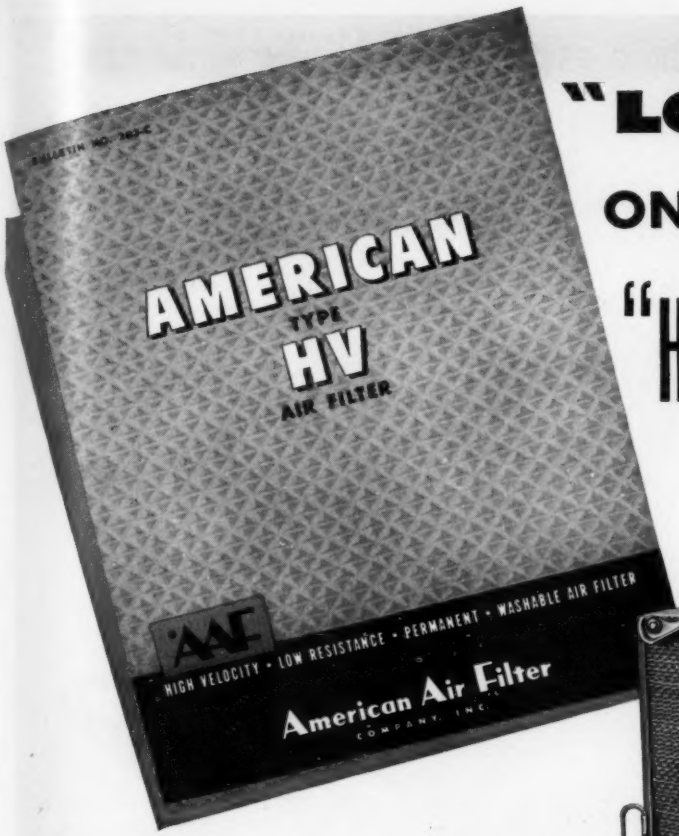
"We get a lot of traffic from these invitations," Mrs. Dittmar said. "We try to have a new display every second month. People are becoming more price conscious; they want the best but they want to see it. They're going to think about it and think about what it is going to cost. When they come to our display room we know that this thinking process is beginning — the rest then is pretty much up to us.

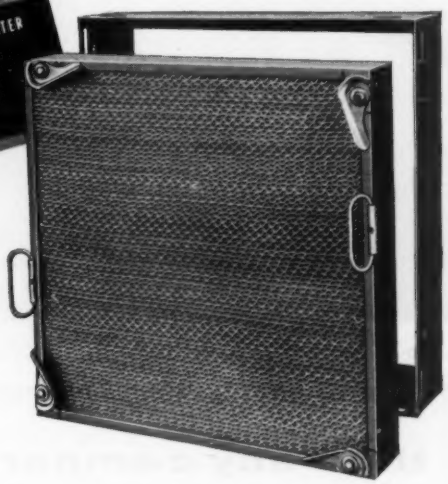
Free Estimate Offered

"Every prospect who comes to our display room is told about our free estimate service. We emphasize the fact that we gladly give a free heating survey and estimate without any obligation. We are particularly careful to see that no high pressure sales methods are used. We find this pays off in more customer leads and better satisfied customers who do a year around advertising job for us.

"And of course the big thing is that better than two thirds of the new jobs brought to us through satisfied customers are remodeling jobs — modernization work with perimeter heating shows a strong profit for us."

HERE'S THE "LOWDOWN" ON TODAY'S FINEST "HIGH VELOCITY" AIR FILTER





New bulletin details design and construction advantages of

AAF Type HV-2

Building better "dust traps" is a matter of pride with AAF engineers—and the HV-2 filter offers a perfect example of how continued research can put a prosaic product head and shoulders above its class.

New media design for higher cleaning efficiency—greater capacity to save you space and dollars—simplified assembly for important installation economies—these and many other exclusive AAF features stamp the HV-2 as the standout performer among high velocity air filters.

The complete "feature by feature" story is contained in new AAF Bulletin No. 203-C. Fill out and mail coupon for your free copy—now!

American Air Filter
COMPANY, INC.
Louisville 8, Kentucky • American Air Filter of Canada, Ltd., Montreal, P. Q.

FILL OUT AND MAIL NOW!

American Air Filter Company, Inc., 355 Central Avenue, Louisville 8, Ky.

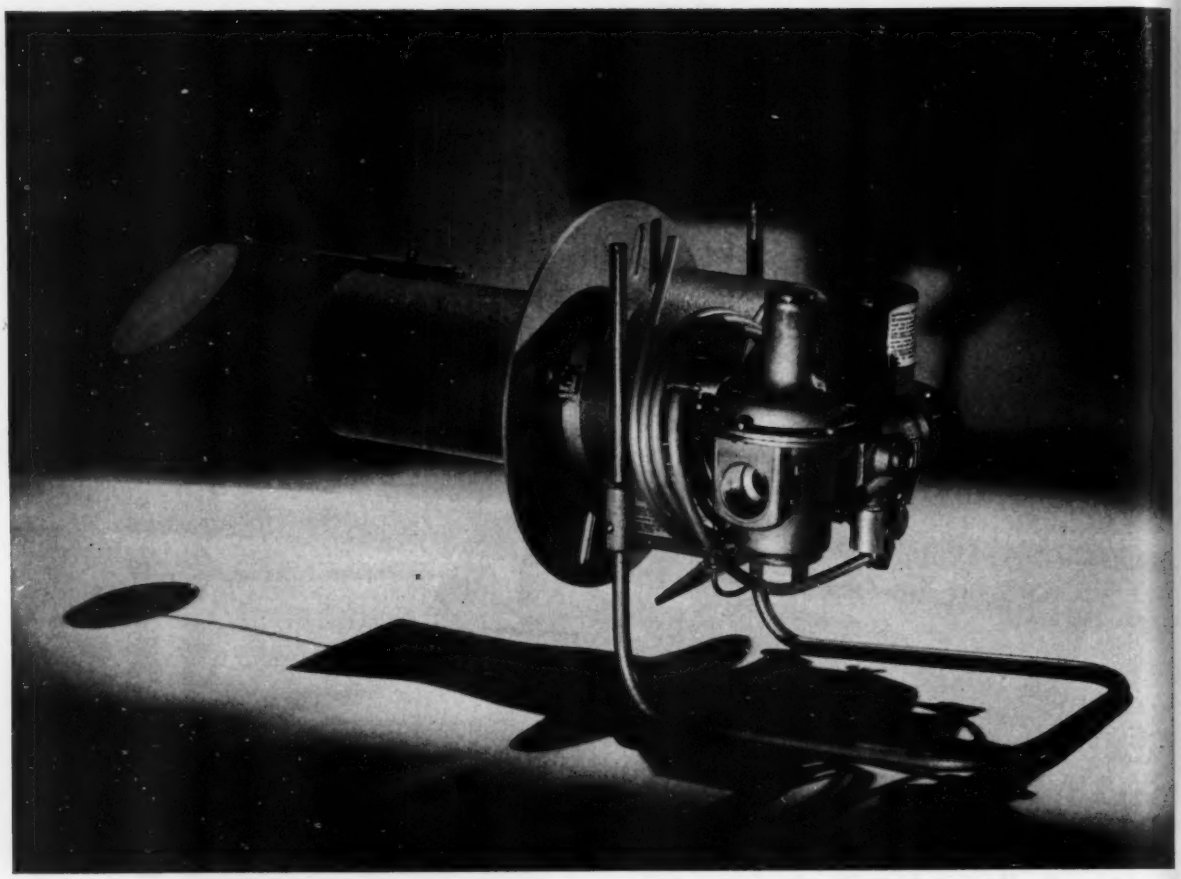
Please send me copy of your new Bulletin No. 203-C describing the American Type HV-2 Air Filter.

Name_____

Company_____

Street_____

City_____ State_____



This Quality Burner costs you less than any comparable model

Lowest-priced burner in the field . . . easiest to install . . . practically no service calls . . . that's what our dealers are saying about the new Barber GUN-HEAT gas conversion burners.

Look at the GUN-HEAT model shown above. It's the popular SNG 1-A designed for converting oil-fired boilers and furnaces to gas. AGA tested and listed from 65,000 to 185,000 BTUH on natural and mixed gases. Other models are available up to 350,000 BTUH.

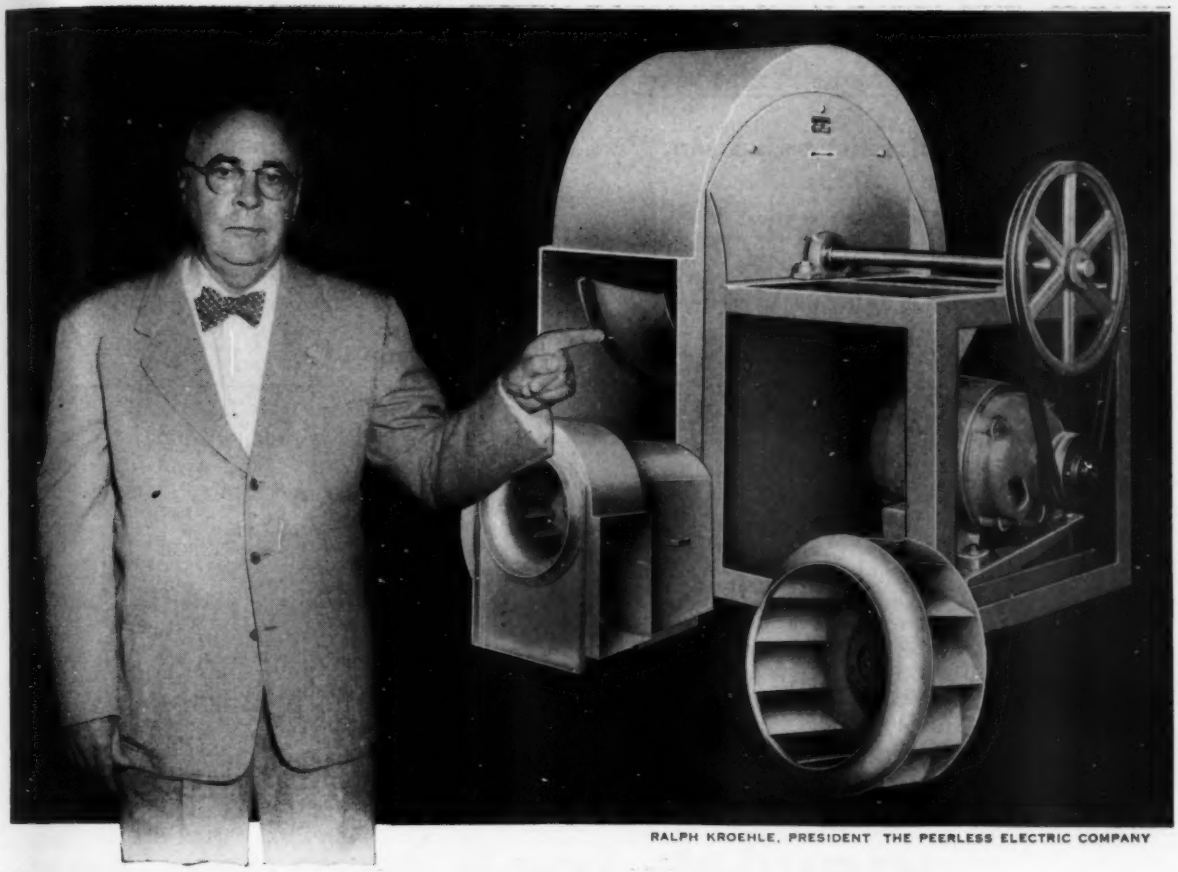
Because we know that repeated service calls can gobble up dealer's profits, Barber engineers have wrapped up 35 years of burner know-how in the GUN-HEAT to make it trouble-free in operation and easy to install correctly.

The SNG 1-A, for example, has no moving parts. The venturi is super-strong pressed steel and the blast tube is seamless welded.

How can quality burners be priced so low? Briefly, because this burner is designed for specific applications, we have been able to standardize on parts and substitute steel fabrications and steel stampings in place of costly castings. The result is mass production methods for Barber—and lower costs for you.

Write for specifications and prices on the GUN-HEAT to the address below.

THE Barber MANUFACTURING COMPANY
GAS AND OIL BURNER DIVISION
3704 Superior Avenue, Cleveland 14, Ohio • HE 1-6045



RALPH KROEHLE, PRESIDENT THE PEERLESS ELECTRIC COMPANY

"...THE BEST BLOWER ENGINEERING..."

● Peerless engineers work under orders to give every fan and blower "the best possible engineering." Our engineering standards now meet or exceed all industry codes. The reason is simple.

COMPLETE ENGINEERING—Peerless builds its own motors and job matches them to meet blower requirements. They have the advantage of being one complete unit, tested thoroughly for motor characteristics, speed and drive alignment.

HEAVY CONSTRUCTION—Peerless frames and housings are better and of heavier construction than any competitive products. Construction is all-welded. The result is a vibration-free unit.

NAFM APPROVED—Peerless Backward Curve Belt Drive Utility Blowers in sizes from 12½" to 36½" meet all NAFM recommendations. They have self-limiting horsepower characteristics and dynamically balanced wheels with matched spun cones. There is nothing in the air stream. Operation is exceptionally quiet.

CERTIFIED RATINGS

Certified ratings are the result of tests made by the Manufacturers in accordance with the Standard Test Code for Centrifugal, Axial, and Propeller Fans adopted jointly by the National Association of Fan Manufacturers, Inc. and the American Society of Heating and Ventilating Engineers.

AUTHORIZED BY NAFM

PERFORMANCE DATA—Complete data on Peerless fans and blowers is cataloged for easy reference. Bulletin SDA-160 shows all fans and forward curve blowers. Bulletin SDA-200 gives all data on backward curve blowers (NAFM) from 12½" to 36½". Use the coupon below to get your file copy. Dimension prints are available on request.

THE PEERLESS ELECTRIC CO.
WARREN, OHIO

☐ Send me Bulletin SDA-160.
☐ Send me Bulletin SDA-200.

NAME .....
TITLE .....
COMPANY .....
ADDRESS .....

Peerless Electric

FAN AND BLOWER DIVISION
THE PEERLESS ELECTRIC COMPANY
1405 W. MARKET ST. • WARREN, OHIO
FANS · BLOWERS · MOTORS · ELECTRONIC EQUIPMENT

Housing Census Heating Data

Albany • Grand Rapids • Jackson, Miss. • Louisville • Toledo • Waterloo

SUGGESTIONS on how a warm air heating dealer can use some of the housing data available from the Bureau of Census were given in the November 1954 American Artisan. Localities covered in the reports are metropolitan areas that are socially and economically integrated with the central city. Data for various areas has been reported regularly in American Artisan since November 1954. Additional reports will continue to appear regularly.

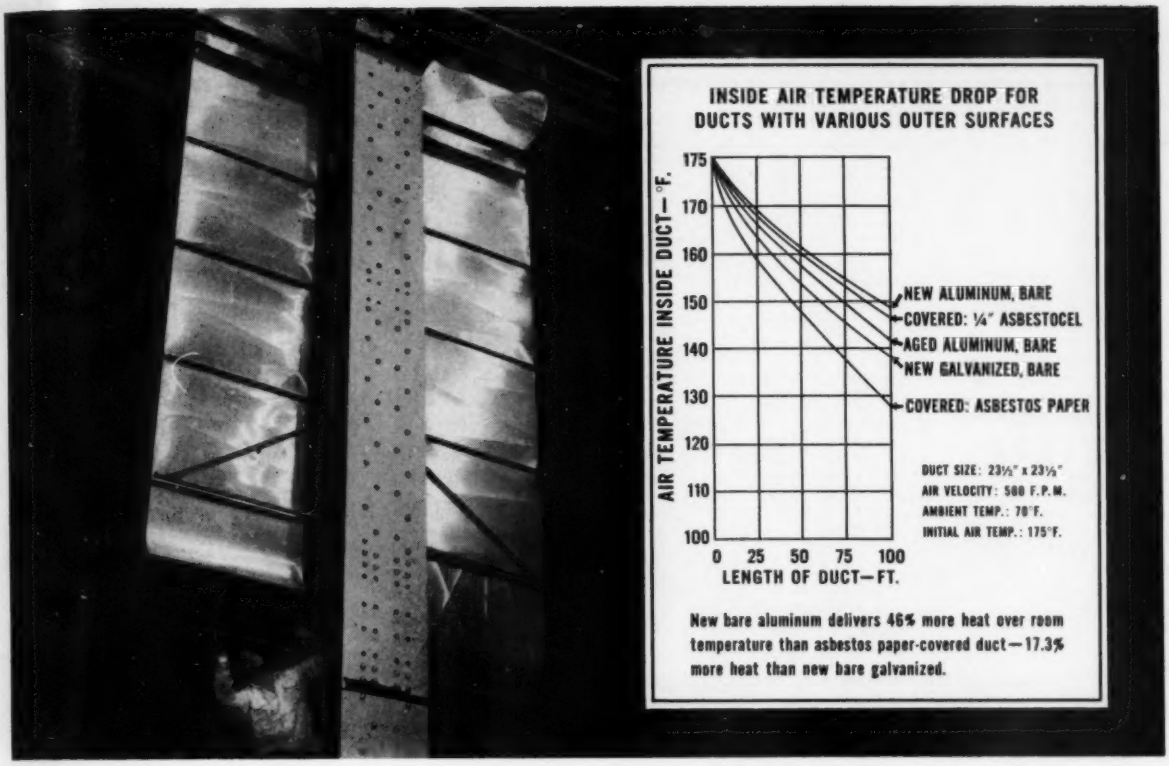
Types of Fuel Used in Centrally Heated Dwelling Units

	Standard Metropolitan Areas												
		Albany N.Y.			Grand Rapids Mich.	Jackson Miss.		Louisville Ky.			Toledo Ohio	Waterloo Iowa
	The area	Albany County	Rensselaer County	Schenectady County	Kent County	Hinds County	The area	Jefferson County	Clark County Ind.	Floyd County Ind.	Lucas County	Black Hawk County
All dwelling units	160,114	74,582	40,898	44,634	89,191	40,111	170,858	142,830	14,334	13,694	119,111	29,938
Number reporting heating equipment	151,225	71,045	37,200	42,980	84,265	36,390	164,115	137,845	13,190	13,080	114,505	28,995
Central heating	106,350	48,710	21,950	35,690	61,290	8,995	81,275	71,330	4,275	5,670	79,005	21,695
Coal	48,705	19,820	10,395	18,490	32,465	75	48,095	40,950	3,115	4,030	37,695	14,425
Wood	385	120	200	65	555	50	490	400	45	45	85	180
Utility gas	9,130	4,735	1,375	3,020	20,965	8,660	25,165	24,225	300	640	26,550	1,410
Bottled gas	310	115	100	95	210	80	480	350	65	65	215	60
Liquid fuel	45,205	22,825	9,340	13,040	5,770	10	6,125	4,645	675	805	13,255	5,530
Other fuel	1,710	705	330	675	1,045	30	445	320	55	70	845	60
Not reporting	905	390	210	305	280	90	475	440	20	15	360	30

Types of Nonfarm Dwelling Units, by Type of Heating and Year Built

	Total occupied						Owner occupied			Renter occupied				
	Total	1 dwelling unit, detached	Other 1, and 2 dwelling unit	3 and 4 dwelling unit	5 to 9 dwelling unit	10 dwelling unit or more	Total	1 dwelling unit, detached	All other dwelling units	Total	1 dwelling unit, detached	Other 1, and 2 dwelling unit	3 and 4 dwelling unit	5 to 9 dwelling unit
Standard Metropolitan Area of Albany, N.Y. — Albany, Rensselaer and Schenectady Counties														
All occupied units	142,130	56,075	52,770	21,205	8,040	4,040	72,660	48,095	24,565	69,470	7,980	32,335	17,705	7,515
HEATING EQUIPMENT														
Central heating	96,181	45,249	33,505	7,946	6,077	3,404	58,338	40,803	17,535	37,843	4,446	18,758	5,570	5,739
Piped steam or hot water	71,845	31,059	26,339	5,796	5,478	3,173	41,695	27,969	13,726	30,150	3,090	14,901	3,899	5,140
Warm air furnace	24,336	14,190	7,166	2,150	599	231	16,643	12,834	3,809	7,693	1,356	3,857	1,671	599
Noncentral heating, with flue	38,561	8,397	17,138	10,859	1,680	487	11,915	5,885	6,030	26,646	2,512	12,163	9,938	1,567
Nonctrl. htng., without flue; or not htd.	4,232	1,076	1,175	1,675	190	116	1,154	565	589	3,078	511	753	1,583	115
Not reported	3,162	1,358	951	727	92	34	1,258	847	411	1,904	511	662	616	92
YEAR BUILT														
1945 or later	11,555	9,490	743	441	408	473	7,243	6,963	280	4,312	2,527	558	441	366
1940 to 1944	5,302	4,042	637	156	415	52	3,030	2,845	185	2,272	1,197	452	156	415
1939 or earlier	119,780	39,568	49,928	19,997	6,876	3,411	60,733	37,174	23,559	59,047	2,394	30,339	16,563	6,393
Not reported	5,489	2,973	1,459	610	342	105	1,652	1,111	541	3,837	1,862	984	544	342
Standard Metropolitan Area of Grand Rapids, Mich. — Kent County														
All occupied units	78,065	52,215	16,160	5,680	2,530	1,480	53,325	46,075	7,250	24,740	6,140	10,110	4,760	2,335
HEATING EQUIPMENT														
Central heating	57,575	39,188	10,845	4,166	2,154	1,222	41,443	35,553	5,890	16,132	3,635	5,898	3,435	2,002
Piped steam or hot water	8,782	2,869	1,758	1,645	1,333	1,177	3,633	2,448	1,185	5,149	421	972	1,347	1,268
Warm air furnace	48,793	36,319	9,087	2,521	821	45	37,810	33,105	4,705	10,983	3,214	4,926	2,088	734
Noncentral heating, with flue	17,670	11,324	4,650	1,325	244	127	10,441	9,307	1,134	7,229	2,017	3,673	1,190	222
Nonctrl. htng., without flue; or not htd.	1,416	817	410	112	44	33	694	618	76	722	199	346	112	44
Not reported	1,403	883	258	76	89	97	747	595	152	656	288	194	22	67
YEAR BUILT														
1945 or later	9,201	8,797	268	72	64	...	8,432	8,319	113	769	478	155	72	64
1940 to 1944	2,798	2,687	83	...	...	28	2,613	2,528	85	185	159	26	...	...
1939 or earlier	64,383	39,492	15,626	5,479	2,363	1,423	41,312	34,389	6,923	23,071	5,103	9,774	4,592	2,207
Not reported	1,685	1,242	183	129	103	28	971	843	128	714	399	155	96	64

(*Continued on page* 118)



New bare aluminum delivers 46% more heat over room temperature than asbestos paper-covered duct—17.3% more heat than new bare galvanized.

For greater heat delivery... think of Kaiser Aluminum

As the chart above shows, new bare duct made of Kaiser Aluminum delivers *more* heat—in most cases, *far* more—than any other duct of comparable cost. This is due to aluminum's low emissivity, low friction loss, and high thermal reflectivity.

When used in air conditioning units, Kaiser Aluminum duct delivers more cool air.

This increased efficiency lowers fuel and power bills for your customers—gives *you* a big competitive advantage!

And check these other big advantages! 1) Pound for pound, aluminum covers three times the area of galvanized. 2) Its light weight cuts installation costs as much as 12% due to greater speed and efficiency in transporting, handling, erecting. 3) Aluminum offers up to 20% saving in friction loss. 4) Same BTU delivery with as much as 14% smaller duct sizes—another saving in metal, fabrication, space and operating costs. 4) Resists corrosion—will not stain adjacent surfaces.

Kaiser Aluminum takes perfect Pittsburgh Lock Seam! Can be fabricated faster and easier by same methods and equipment as other metals.

A Kaiser Aluminum engineer will gladly show you even more advantages of Kaiser Aluminum Utility Sheet. Simply contact any Kaiser Aluminum sales office, located in principal cities, or one of our distributors. Kaiser Aluminum & Chemical Sales, Inc., *General Sales Office*, Palmolive Bldg., Chicago 11, Illinois; *Executive Office*, Kaiser Bldg., Oakland 12, California.

Important information about gauge sizes! The Brown & Sharpe gauge used for aluminum is two numbers *higher* than the Standard gauge used for galvanized. Thus, for example, 18 ga. aluminum and 20 ga. galvanized are the same thickness (.040").

Send coupon today for free folder. Helps you take full advantage of aluminum's unique combination of properties. Availability charts on Kaiser Aluminum Utility Sheet in both flattened and coiled sheets, including thicknesses, weights, etc. Also contains weight and coverage comparisons for aluminum and galvanized.

Kaiser Aluminum & Chemical Sales, Inc.
5972 Kaiser Building, Oakland 12, California

Please send_____ free copies of folder entitled "Kaiser Aluminum Utility Sheet."

Name_____

Address_____

Company_____

City and State_____

Housing Census Heating Data

(*Continued from page* 116)

Types of Nonfarm Dwelling Units, by Type of Heating and Year Built

	Total occupied						Owner occupied			Renter occupied				
	Total	1 dwelling unit, detached	Other 1, and 2 dwelling unit	3 and 4 dwelling unit	5 to 9 dwelling unit	10 dwelling unit or more	Total	1 dwelling unit, detached	All other dwelling units	Total	1 dwelling unit, detached	Other 1, and 2 dwelling unit	3 and 4 dwelling unit	5 to 9 dwelling unit	10 dwelling unit or more
Standard Metropolitan Area of Jackson, Miss. — Hinds County															
All occupied units	32,185	20,820	7,725	2,395	945	300	15,550	13,925	1,625	16,635	6,895	6,390	2,185	875	290
HEATING EQUIPMENT															
Central heating	8,144	6,067	1,322	547	208	...	5,624	5,236	388	2,520	831	969	512	208	...
Piped steam or hot water	1,651	962	428	178	83	...	890	739	151	761	223	277	178	83	...
Warm air furnace	6,493	5,105	894	369	125	...	4,734	4,497	237	1,759	608	692	334	125	...
Noncentral heating, with flue	6,385	4,449	1,379	245	271	41	2,482	2,238	244	3,903	2,211	1,177	245	229	41
Nonctrl. htng., without flue; or not htd.	16,440	9,451	4,795	1,557	466	171	6,790	5,801	989	9,650	3,650	4,014	1,382	438	166
Not reported	1,219	855	231	45	...	88	657	652	5	562	203	231	45	...	83
YEAR BUILT															
1945 or later	9,536	7,287	1,593	454	135	67	6,261	6,004	257	3,275	1,283	1,336	454	135	67
1940 to 1944	3,390	2,368	653	168	179	22	1,936	1,807	129	1,454	561	550	142	179	22
1939 or earlier	17,721	10,238	5,142	1,688	541	112	6,742	5,615	1,127	10,979	4,623	4,269	1,504	471	112
Not reported	1,531	928	339	85	90	89	603	500	103	928	428	236	85	90	89
Standard Metropolitan Area of Louisville, Ky. — Jefferson County with Clark and Floyd Counties, Ind.															
All occupied units	156,125	94,065	27,225	17,370	10,045	7,420	85,220	73,550	11,670	70,905	20,515	18,660	15,090	9,380	7,260
HEATING EQUIPMENT															
Central heating	77,802	51,602	10,187	6,651	4,019	5,343	50,666	44,879	5,787	27,136	6,723	6,225	5,379	3,613	5,196
Piped steam or hot water	16,774	5,478	1,822	2,342	2,200	4,932	5,664	4,299	1,365	11,110	1,179	1,140	1,982	1,997	4,812
Warm air furnace	61,028	46,124	8,365	4,309	1,819	411	45,002	40,580	4,422	16,026	5,544	5,085	3,397	1,616	384
Noncentral heating, with flue	61,311	36,792	13,124	7,020	3,222	1,153	29,710	25,072	4,638	31,601	11,720	9,426	6,228	3,074	1,153
Nonctrl. htng., without flue; or not htd.	14,025	4,204	3,334	3,256	2,523	708	3,533	2,654	879	10,492	1,550	2,630	3,136	2,468	708
Not reported	2,976	1,467	571	444	279	215	1,305	943	362	1,671	524	373	348	224	202
YEAR BUILT															
1945 or later	18,341	15,885	828	723	499	406	14,109	13,751	358	4,232	2,134	494	699	499	406
1940 to 1944	13,944	8,990	1,612	775	860	1,707	8,292	7,854	438	5,652	1,136	1,223	726	860	1,707
1939 or earlier	120,847	67,254	24,328	15,710	8,546	5,009	61,328	50,622	10,706	59,519	16,632	16,653	13,504	7,881	4,849
Not reported	2,984	1,933	453	161	139	298	1,490	1,323	167	1,494	610	286	161	139	298
Standard Metropolitan Area of Toledo, Ohio — Lucas County															
All occupied units	111,275	75,785	17,760	8,195	5,325	4,210	72,820	64,595	8,225	38,455	11,190	11,355	6,875	4,960	4,075
HEATING EQUIPMENT															
Central heating	74,624	51,606	10,844	4,879	3,441	3,854	51,699	45,925	5,774	22,925	5,681	6,423	3,871	3,197	3,753
Piped steam or hot water	17,337	6,194	3,018	2,400	2,214	3,511	6,921	5,239	1,682	10,416	955	1,871	2,088	2,092	3,410
Warm air furnace	57,287	45,412	7,826	2,479	1,227	343	44,778	40,686	4,092	12,509	4,726	4,552	1,783	1,105	343
Noncentral heating, with flue	30,729	20,684	5,791	2,727	1,377	150	17,858	15,836	2,022	12,871	4,848	4,046	2,511	1,316	150
Nonctrl. htng., without flue; or not htd.	2,421	1,164	652	353	188	64	1,088	944	144	1,333	220	556	305	188	64
Not reported	3,498	2,329	472	236	320	141	2,174	1,888	286	1,324	441	329	188	259	107
YEAR BUILT															
1945 or later	11,705	10,629	558	264	133	121	9,863	9,603	260	1,842	1,026	298	264	133	121
1940 to 1944	6,046	5,303	171	107	224	241	4,716	4,604	112	1,330	699	124	79	187	241
1939 or earlier	89,162	57,238	16,419	7,585	4,389	3,531	56,346	48,752	7,594	32,816	8,486	10,463	6,293	4,133	3,441
Not reported	4,358	2,610	613	238	580	317	1,891	1,631	260	2,467	979	471	238	507	272
Standard Metropolitan Area of Waterloo, Iowa — Black Hawk County															
All occupied units	26,695	18,440	3,815	2,450	1,200	790	17,420	15,545	1,875	9,275	2,895	2,535	2,050	1,055	740
HEATING EQUIPMENT															
Central heating	19,819	13,225	2,849	1,949	1,006	790	13,332	11,843	1,489	6,487	1,382	1,843	1,612	910	740
Piped steam or hot water	2,633	822	360	422	503	526	914	736	178	1,719	86	314	338	455	526
Warm air furnace	17,186	12,403	2,489	1,527	503	264	12,418	11,107	1,311	4,768	1,296	1,529	1,274	455	214
Noncentral heating, with flue	5,945	4,698	796	341	110	...	3,721	3,380	341	2,224	1,318	545	299	62	...
Nonctrl. htng., without flue; or not htd.	585	293	128	81	83	...	251	207	44	334	86	105	60	83	...
Not reported	345	223	42	80	...	...	115	115	...	230	108	42	80	...	...
YEAR BUILT															
1945 or later	4,037	3,661	211	117	...	48	3,283	3,283	...	754	378	211	117	...	48
1940 to 1944	2,193	2,046	147	...	...	...	1,770	1,744	26	423	302	121	...	...	...
1939 or earlier	20,043	12,476	3,345	2,333	1,171	718	12,079	10,311	1,768	7,964	2,165	2,143	1,933	1,055	668
Not reported	420	255	112	...	29	24	286	205	81	134	50	60	...	...	24

Bank on a *Task-Force* Truck to Cut the Cost of Moving Goods!

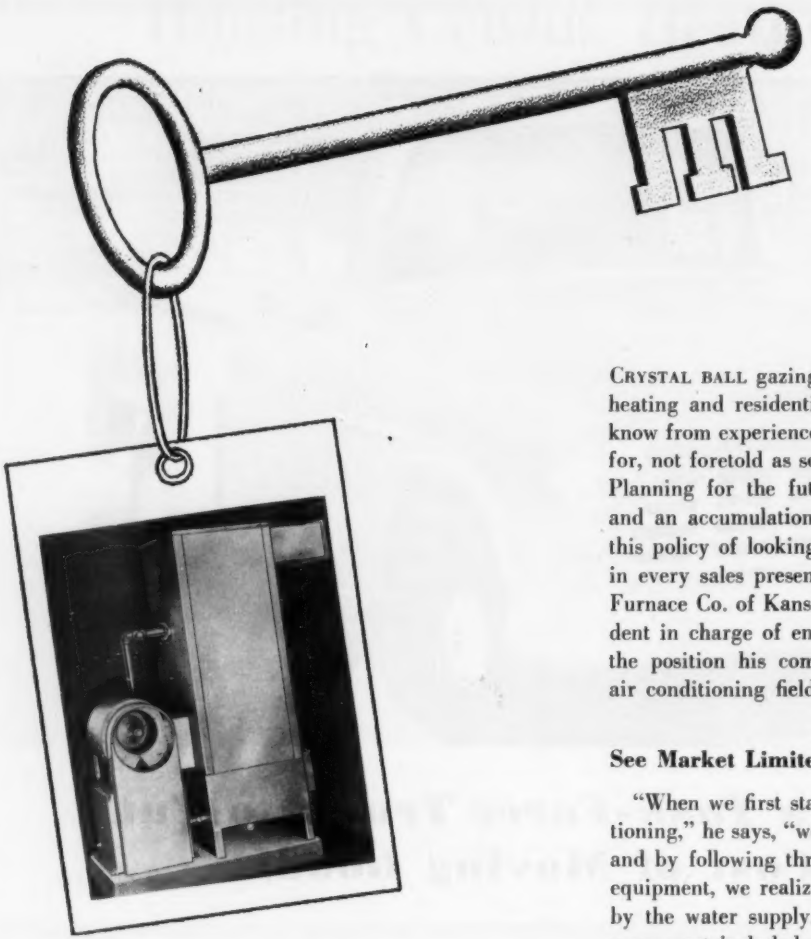
You'll save money on the job and be way ahead at trade-in time with a work-styled Chevrolet Pickup.

You save with modern high-compression power—In Chevrolet's new pickup truck, a new Thriftmaster engine is supplying the power punch—a big *valve-in-head* wallop, which means you get the most out of a gallon of gas. Fast acceleration shaves stop-and-go time and helps keep you on top of crowded schedules. And even in cold weather, you start more quickly with Chevrolet's double-punch 12-volt electrical system. That's a big advantage in itself—a husky reserve of electrical power when you need it!

You save with the most modern truck features your field has ever seen—New Work-Styling—so distinctively different that your Task-Force Truck is a profitable advertisement-on-wheels. New Overdrive or Truck Hydra-Matic, each an extra-big time and money saver, available at extra cost. New front and rear suspension systems, High-Level ventilation, outstanding cab comfort—there's everything to make driving less a chore. And you're bound to save money when drivers maintain peak efficiency!

Why buy an old-fashioned truck and stand to take a licking at trade-in time? See your Chevrolet dealer for the most modern trucks money can buy. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

NEW CHEVROLET CHEVROLET *Task-Force* TRUCKS



Cooling Towers Play Key Role

. . . in this dealer's sales program: "Get the customer to think of air conditioning first, then cooling towers"

CRYSTAL BALL gazing isn't an art practiced by warm air heating and residential air conditioning dealers — they know from experience that the future can be only planned for, not foretold as some prophets would have us believe. Planning for the future is based upon past experience and an accumulation of the knowledge of trends. Using this policy of looking toward the future and including it in every sales presentation has paid off for the Johnson Furnace Co. of Kansas City, Mo. G. W. Grist, vice president in charge of engineering, is largely responsible for the position his company now holds in the residential air conditioning field.

See Market Limited by Water Supply

"When we first started installing residential air conditioning," he says, "we realized the potential of the market and by following through on the utility demands of this equipment, we realized that the market would be limited by the water supply. Thus, every estimate submitted to a prospect included an alternate bid that included water conserving equipment."

The salesmen were not content with the prospect's approval of the initial bid for air conditioning equipment without the water conserving equipment. They continued their appeal, and the records show that 75 percent of the customers bought either cooling towers or evaporative condensers.

The foresight in selling water conserving equipment paid off during the summer of 1954 as the water shortage in the Kansas City area caused the municipal government to pass an ordinance requiring water conserving devices on all air conditioning equipment. Violation of the ordinance is punishable by a $25 to $500 fine. Those customers with cooling towers and evaporative condensers remembered Johnson Furnace Co. and told their friends about the foresight they had shown. This customer appreciation has resulted in a number of leads and prospect acceptance of the firm.

During the first five months of 1955 the Johnson Company had sold as many residential air conditioning installations as had been sold during all of 1954. Mr. Grist says he expects to double the 1954 sales before the 1955 season closes. Of course, all installations now use water conserving equipment, he added.

(*Continued on page* 122)

Sell **old** *customers!*

Servel "add-on" cooling unit. The world's only residential gas add-on model.

Every hot air home is a Servel "add-on" cooling prospect!

Talk about "ready-made" customers, these are the best! You can be sure they *want* summer cooling. And you can sell it to them . . . with the Servel "add-on" unit.

Here's sure-fire sales appeal. Servel's exclusive absorption principle provides efficient, dependable cooling. And the famous, "no moving parts" design cuts maintenance problems to the minimum.

So team up with Servel. Get your share of this giant market now!

Sell **new** *customers!*

Servel All-Year Air Conditioner. Available in 2-, 3-, and 5-ton capacities.

Cash in on the booming demand for Servel All-Year® air conditioning!

Here's a sales-natural for new homes. The quick sale of the Servel-equipped home in Austin's famous Air-Conditioned Village proves that. What's more, a tight cost analysis of the 22-house project proved Servel has one of the lowest operating costs.

If a satisfied customer is your best advertisement, you'll find it pays to stock and sell Servel.

Sell **servel**

Servel

the name to watch for great advances in

AIR CONDITIONING ✓ REFRIGERATION

SERVEL, INC., Air-Conditioning Division,
Dept. AA-75, Evansville 20, Indiana.

Please send me details on Servel line and franchise.

Name_____

Firm_____

Address_____

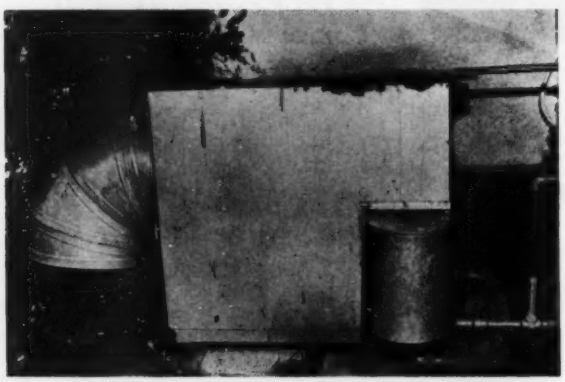
City_____ Zone_____

County_____ State_____

Cooling Towers Loom in Total Sales Volume

(*Continued from page* 120)

THE FIRST STEP of every sales campaign begins at a business conference of the Johnson Furnace Company's officers (*from left*): J. W. Grist, vice president; G. W. Johnson, secretary; Norman J. Johnson, president; Clem Alexander, vice president



COMPACT INSTALLATION fits in an out of the way location. Discharge elbow on 3 ton unit shown serves two purposes — prevents wind interference with air discharge and removes possibility of foreign objects entering tower

One of the sales tools used in the cooling tower promotion is a typed sheet that shows the number of hours a residential air conditioner is expected to operate each year. This sheet is supplemented by a tabulation of water consumption for each size of equipment. The water consumption is also converted to cost in dollars. Another tabulation shows the power cost for cooling tower or evaporative condenser blower and pump. To this figure is added the cost of makeup water and the final column of the tabulation shows annual savings which can ordinarly be expected from the use of water conserving equipment.

Savings Tabulations Sell Equipment

The salesman uses this savings figure to show how the additional cost of the equipment can be made up in several years and how future savings can be applied against the overall cost of the equipment because of the economy of operation.

Johnson Furnace Co. has grown along with the warm air heating industry and now has 75 employees. It began selling and installing residential air conditioning systems in 1936 and has been a promoter of year 'round air conditioning ever since. During 1954 the summer cooling installation sales amounted to about 25 percent of the annual dollar volume. Mr. Grist expects that in 1955 residential air conditioning will account for about 35 percent of the annual sales volume. Ultimately the furnace and air conditioning volume should be about equal.

Much of the success of the company depends on the versatility of its employees, Mr. Grist believes. The salesmen not only act as liaison between the company and the prospect at the time of the sale, but also follow through from the very beginning of the contact until the "90 days after sale" call. Each salesman engineers the job, oversees the installation, checks on the initial operation and follows up with a visit to the customer in about three months.

Follow Through Nets Dual Results

The follow up call not only shows the company's interest in the customer and his equipment, but freqently results in leads to other prospects who are interested because of the home owner's enthusiasm.

All leads for prospects do not come from satisfied customers. Radio advertising is used for both heating and cooling promotion. Regular programs have been used but spot announcements have proven the best pullers for the cost involved.

Business Grows with Pre-Sold Customers

"We don't advertise cooling towers," says Mr. Grist, "we want the prospect to think of the Johnson Furnace Co. first and then we tell him about the equipment we believe he needs. This policy is based on our long experience in the field and it has good acceptance, as is evidenced by our growing volume. We know most people have made up their minds to air condition their homes when we learn about their interest. It's up to us to convince them to buy air cooling equipment and cooling towers from us."

The salesmen observe these considerations when selecting a cooling tower location to meet the requirements of the individual customer: noise level, harmony with the landscaping, location to assure adequate air supply and discharge, servicing convenience, adequate drainage and safety and weather protection for exposed auxiliary electrical equipment.

Installing Bethcon air-mixing chamber in the air-conditioning and ventilating system of a large Western building.

HOW BETHCON IS BETTER

When you run into a tough forming or drawing operation, turn to Bethcon galvanized steel sheets. Bethcon's zinc coating is superior to that on regular galvanized sheets, and gives better results under extreme conditions. The reason: Bethcon is galvanized on Bethlehem's continuous lines, rather than by ordinary hot-dip methods. Resulting from years of research, the Bethcon coating solves many problems for sheet metal users.

TIGHTER — The Bethcon coating is more adherent and holds tighter to the steel. This means the coated sheet will take severe drawing or forming without flaking or peeling.

MORE UNIFORM — The zinc is distributed more evenly over the entire Bethcon sheet. The heavy zinc bead usually found on the drip end of ordinary galvanized sheets is eliminated.

BETTER LOOKING — The spangles on Bethcon sheets are bright, uniform and attractive in appearance.

Bethcon is made in sheets or coiled strip, 16-gage or lighter. Either plain carbon steel or Beth-Cu-Loy (copper-bearing) steel can be used for the base metal, depending on your requirements. You can readily get complete information on Bethcon galvanized steel sheets by calling or writing the nearest Bethlehem office.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM STEEL

YOU AND THE LAW

What's the Legal Status of

Dealer's Customer Lists?

Disclosure of such lists by employees and former employees is usually condemned by the courts, but it has to be a clear cut case

THE RIGHT of a heating-air conditioning dealer to the protection from disclosure by employees of the names and addresses of his customers has long been recognized by the courts.

A corporation in New York a few months ago applied to the Supreme Court of that state for an injunction against the solicitation of its trade and customers by a former employee who had organized a competing business.

The court prefaced its decision of this application with the comment on this feature of the law:

"It is necessary that business men and business houses be protected in the property rights which they have built up through perseverance and industriousness. It is likewise true that public policy demands that competition shall not be stifled and that employees be not unreasonably prevented from capitalizing on the experience and skills acquired as the result of having been in the service of an employer."

The injunction was refused as it had not been shown that any customer lists had been used by the offending employee. However, a criminal statute in that state reads, in part:

"Any person having or obtaining access, either with or without the consent of the lawful owner, to any original list, compilation or other collection of the names of customers or subscribers, not less than 500 in number, or to any other original list or other collection of names not less than 500 in number, used in connection with any lawful business or occupation whatever, and who, without the consent of such lawful owner, shall take possession of any such original list, compilation or collection, or any part thereof, or shall make or cause to be made, or take possession of, a copy or duplication thereof, or who shall aid, abet or incite any other person to take or to copy or to cause to be copied or taken, any such list, compilation or collection, or any part thereof, is guilty of a misdemeanor."

Former Employee May Not Use Lists

A decision in that state that has since become well known as an authority in relation to this principle of law, was made in an action for an injunction against a former employee for "interfering with the trade, custom or goodwill of this business or making use of the knowledge or information gained from or contained in the original list, compilation or collection of names and addresses of customers."

In granting the injunction, the appellate court said:

"The names of the customers of a business concern whose trade and patronage has been secured by years of business effort and advertising, and the expenditure of time and money, constitute a part of the goodwill of the business which enterprise and foresight have built up and should be deemed just as secret and entitled to the same protection as a secret of compounding some article of manufacture and commerce."

A statute in a western state derived from one originally enacted in that state 75 years ago, states:

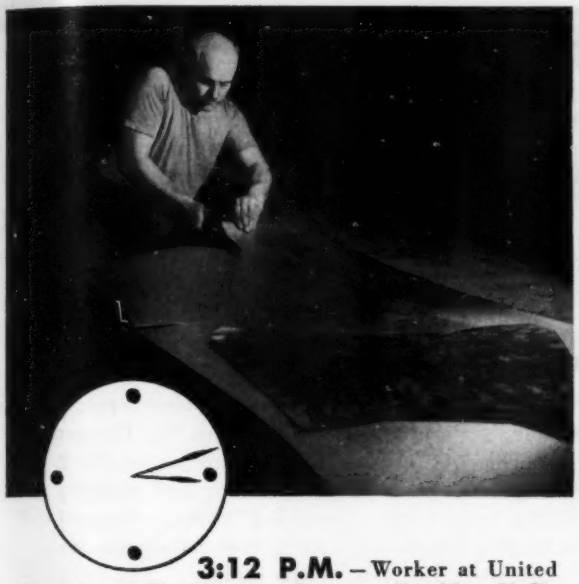
"Everything which an employee acquires by virtue of his employment, except the compensation which is due to him from his employer, belongs to the employer, whether acquired lawfully or unlawfully, or during or after the expiration of the term of his employment."

Old English Law Still Applies

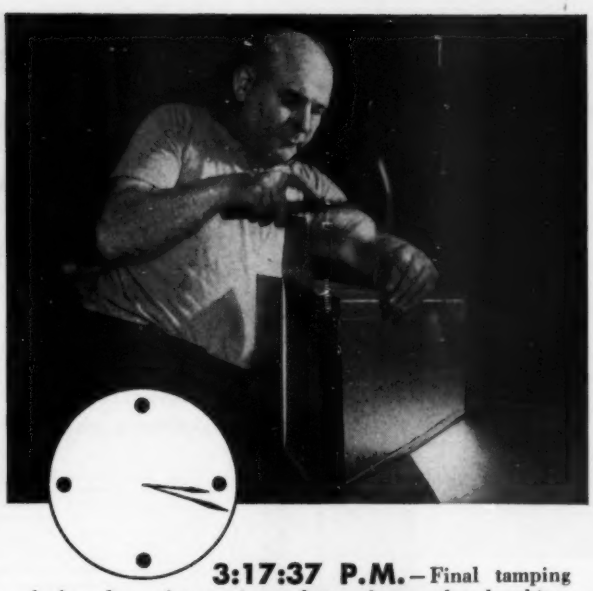
A decision that has served to foster the principle of law under discussion was made over half a century ago by an English court in which it was held that an employee was liable in damages to his employer for divulging the names and other information of customers.

"In the absence of any stipulation to the contrary there is involved in every contract of services an implied obligation, call it by what name you will, on the employee that he shall perform his duty, especially in these essential respects, namely, that he shall honestly and faithfully serve his employer, that he shall not abuse his confidence in matters appertaining to his services and that he shall by all reasonable means within his power protect his employer's interests in respect to matters confided to him in the course of his service. It would be monstrous to suppose that an employee would be absolved from the observance of these essential elements to good service unless they were in terms especially provided in the contract."

[Note: While this discussion applies to actual cases, it should be remembered that legal rules vary in different states.]



3:12 P.M. – Worker at United Roofing and Waterproofing Company, Brooklyn, N. Y., cuts easily into Monel Economy Sheet (roofing temper) with ordinary shears. Sheet is .021 gauge. The fitting being cut out is one of 140 special rustproof flashings headed for Pier 57 operated by New York City's Marine and Aviation Dept.



3:17:37 P.M. – Final tamping locks edges of two pieces that make up the sheathing. Monel flashing needs *no* maintenance, will prevent leaks where heavy steel beams for hoist system crop out of pier roof. "Snipping, forming, knocking together – this .021 Monel sheet is very easy to work," says Mr. George Farbstien, United Roofing shop foreman.

From sheet Monel to finished fitting in 5 minutes and 37 seconds

Thanks to its softer temper, Monel® Roofing Sheet is easy to work with in the shop and on the job. And Monel roofing gives *life-of-the-building* dependability at surprisingly low cost, because Monel's corrosion resistance, high tensile strength and good yield strength make it possible to use thinner gauge sheet.

Go out after profitable Monel roofing and drainage jobs. Our helpful booklets, *Instructions for the Soft Soldering of Monel* and *Basic Application Data – Monel Roofing Sheet* give you the kind of information you need when talking with architects and customers, or when actually working on a Monel installation. They're free. Write for copies—*now*.

On the job, too, corrosion-resisting Monel Roofing Sheet is easy to work with

Atop Pier 57, New York Harbor, Monel sheathing and coping fabricated by United Roofing is quickly installed at base of hoist boom and along roof edge. Because pier is built to last a long time in metal-corroding salt water atmosphere, the architects took no chances. Monel was specified for all exposed sheet metal work. These copings and flashings, as well as louvers, expansion bands, gravel stops and window frames are corrosion-resistant, rustproof Monel. It's readily fabricated and easily soldered, brazed and welded. Needs no special tools, no special methods.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York 5, N. Y.

Monel Roofing
..."for the life of the building"

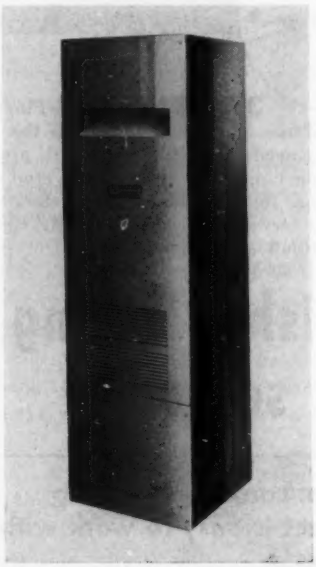
INCO TRADE MARK **Nickel Alloys**

EQUIPMENT DEVELOPMENTS

The latest information on manufacturers' developments is presented here with brief summaries of the applications of these products. For additional product information which is available, see this month's New Literature department.

Gas Fired Furnace

MODEL GBC 70H gas fired furnace for closet installation — Delco Appliance Div., General Motors Corp., Rochester 1, N. Y. Heat transfer section is multi-fin design for quick heat pickup and transfer to the air stream. Heat transfer section is continuous seam



welded. Air control is located in the blower housing and is adjusted to vary the volume of air delivered. Furnace requires installation space of 21 × 23 in. Other features include stainless steel baffles, ¼ in. thick panels of glass fiber with aluminum foil facing, replaceable viscous treated spun glass air filter and built-in draft diverter.

Temperature Control System

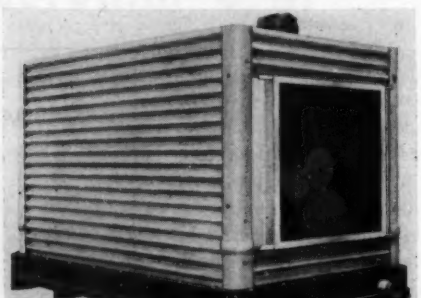
"TEMPAIRTROL" system for modulating air flow and heat input to gas furnaces — Payne-Beverly Mfg. Co., 9242 Beverly Blvd., Beverly Hills, Calif. The control utilizes a two stage thermostat, two stage magnetic gas valve, air volume damper located in the blower scroll and a modulating damper motor. Feature of the system is control of heat input to the furnace through the two stage magnetic gas valve by the action of the two stage thermostat, the company reports. Modulating damper motor controls flow of air bypassed around the air distribution system. Principle of the air distribution system output is circulation of a volume of air containing sufficient heat to match that lost through the building structure.

Lock Joint

"SPEE-D-LOK" 5 ft lock joint with tongue-in-groove locking — Superior Metal Fabricating Co., Pleasant Ave., Niles, O. Locking feature, same as on the 2 ft length, is said to eliminate tooling and malleting for the entire length. "Vanishing" crimp is designed to simplify installation; cutting does not damage the locking edges, the manufacturer states.

Mechanical Draft Cooling Towers

"WOOD AQUATOWER" mechanical draft cooling towers designed to serve air conditioning equipment in capacities from 5 to 15 tons — Marley Co., 222 W. Gregory Blvd. Kansas City, Mo. Towers have forced draft, crossflow design with vertical air discharge; mechanical equipment is located out of the air dis-



charge stream. Vertical air discharge permits location of the towers close to building walls on all sides except air intake side. Features include gravity water flow from open distribution basin, "lifetime" redwood filling, quiet fan with stainless steel shaft and bronze bearing, and corrosion resistance. Models up to 15 tons feature all wood construction.

Combustion Chamber

"NU STANDARD KOLBKAST" combustion chamber designed to save installation time and provide more complete combustion — Kolb Refractories Co., Meadow & Jackson Sts., Philadelphia 48. Unit has tongue

(*Continued on page* 128)

COMPLETELY NEW...AN INDUSTRY FIRST

MOR-SUN

AUTOMATIC GAS-FIRED VENTED RECESSED HEATER

Mor-Sun leads again — with another new extra-profit opportunity for heating dealers — the Mor-Sun Model C-70-GA Vented Recessed Heater.

Extremely compact — low in initial cost — high in adaptability and performance — the Model C-70-GA saves valuable living space by fitting into a wall opening so only its smartly louvered grille is visible. It meets the increasing demand of many builders for a low budget source of dependable, automatic warm air heat. The Mor-Sun Model C-70-GA is an excellent heating unit for all type homes in the South and for many homes in northern climates.

It is another example of the way Mor-Sun can help you get your share of the *profitable* part of the heating market.

Here are some of the
FEATURES
that make the Model C-70-GA
IMPORTANT NEWS TO EVERY HEATING CONTRACTOR

- Approved for minimum clearances to combustible surfaces when recessed in the wall.
- Conforms to all details of F.H.A. Minimum Property Requirement Pamphlets Nos. 51 and 52.
- Permits installation of Type B chimney vent.
- Capacity — 70,000 BTU/Hr. input, 52,500 BTU/Hr. output.
- Completely factory-assembled — draft hood installed — pre-wired — painted Autumn Haze Green.
- Compact — only 25" square by 52¾" high.
- Adaptable — grilles available for side wall or corner installation.
- Fully automatic — wall thermostat is standard equipment.

OIL-FIRED RECESSED HEATER C-75-O

Completely approved by UL for minimum clearances to combustible surfaces. Output—57,000 BTU/Hr., input—33 c.c.

HEAT EXCHANGER GUARANTEED FOR 5 YEARS

You get so much more with MOR-SUN

Also manufacturers of ROLY-DOOR STEEL GARAGE DOORS and MORRISON SERVICE BODIES.

For complete details... fill in the coupon... **MAIL TODAY**

Mor-Sun Furnace Division
Morrison Steel Products, Inc.
609 Amherst St., Buffalo 7, N. Y.

Send me complete information on the Mor-Sun Recessed Heaters.

Name.....Title.....

Firm .....

Street Address.....

City.....Zone.....State.....

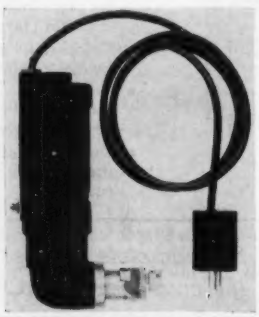
1955

and groove design which is said to give better fit and prevent escape of gases. Base is recessed ¼ in. at bottom for insulation from the floor; Chamber

comes in six pieces: four equal wall segments and two recessed base pieces. Two galvanized steel bands are placed around unit after installation. Chamber is in five sizes.

Nibbler Fuse Control

FUSE CONTROL system designed to prevent operational abuses and extend working life of nibblers — Fenway Machine Co., 263 N. 23rd St., Philadelphia. System consists of plastic fuse cap with replaceable fuse and three prong plug installed directly into the nibbler



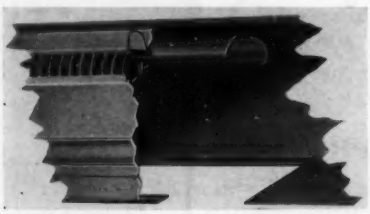
power line, replacing the existing plug connection. When nibbler is in use, the fuse will blow if nibbler is overheated, if punch and die are too dull for safe cutting, if operator is forcing cut or if nibbler is overloaded with metal of heavier gage or hardness than its rated capacity, according to the manufacturer. When fuse blows, nibbler's cutting action is stopped, signalling operator to correct the condition. Cutting can't be resumed until corrections are made. Fuse control is optional on all equipment; it is also available separately.

Foil Enclosed Insulation

"FIBERGLAS" residential building insulation with aluminum foil on both sides — Owens-Corning Fiberglas Corp., 1930 Nicholas Bldg., Toledo 1, O. Outer side has reflective surface to turn back radiant heat; this surface is perforated to avoid moisture buildup in insulation. Aluminum foil on the other side provides a vapor barrier. Material is in batts and roll blankets, in widths of 15, 19 and 23 in., and in lengths up to 60 ft for rolls; batts are 4 ft long.

Baseboard Diffuser with Damper

MODEL 188 baseboard perimeter diffuser with built-in rotary damper and sliding "Adjusto-Bottom" base strip — Air Control Products, Inc., Coopersville, Mich. An integral part of the face, the damper



maintains a constant air pattern at any degree of opening, according to the company. Unit is balanced by a simple set screw adjustment. "Adjusto-Bottom" eliminates special cutting and fitting; ducts can be located at end positions with the feature. Unit's free area is 29.36 sq in. A 12 ft model 189 is also available.

Glass Lined Water Heater

"ULTRAGLAZE" glass lined water heater employing same type of insulation as used on thermos bottles — Southern Heater Corp., Compton, Calif. Entire tank is lined with glass. Other features are instant action thermostat and thermomagnetic pilot equipment designed to insure fast recovery and assure safety on all types of glass, the manufacturer reports.

Sectional Duct Furnaces

SERIES DS sectional duct furnaces which combine to produce custom engineered heating and air conditioning systems with capacities of up to 2,000,000 Btu — Reznor Mfg. Co., Mercer, Pa. Sections weigh 315 lb each; all other components for air moving, cooling, cleaning and humidifying can be selected to meet the requirements. Sectionalization is said to allow operation of less than the total installed capacity during periods of less than peak demand.

(Continued on page 130)

On duct-insulation jobs—

Low installation cost of Microlite and L·O·F Super·Fine can clinch the contract

Speed and ease of application can mean the difference in cost it takes to clinch a big insulation contract. That's why many contractors use L·O·F Glass Fibers' Super·Fine and Microlite to cut application costs without sacrificing insulating efficiency.

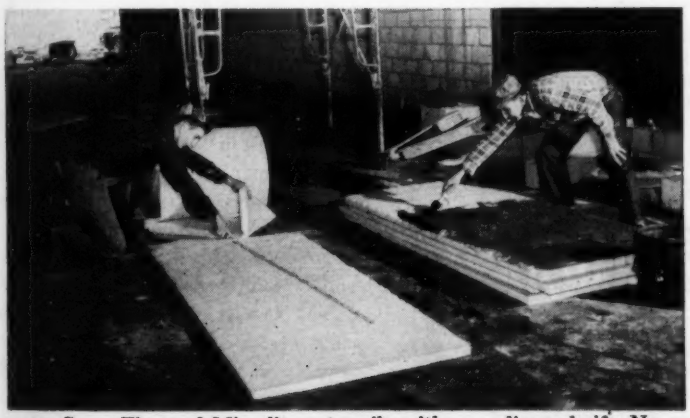
You'll find it simple to apply—These soft-textured blankets are pleasant to handle, quick to apply. Require no special tools or skills. Lightweight, resilient L·O·F Super·Fine and Microlite fill hard-to-reach places and are easy to manage on tall ladders or scaffolds. An unskilled worker can apply an average of 500 square feet of insulation a day.

The high insulating efficiency of Microlite and L·O·F Super·Fine results from the countless dead air cells formed by millions of fine glass fibers, which effectively reduce heat loss or gain.

Save on storage space, too—L·O·F Super·Fine and Microlite come in tightly compressed rolls that take up less space and spring back to full thickness when unrolled. Available in blanket form up to 72″ wide, 5″ thick and from 50′ to 200′ long, depending on thickness. Also available with various facings to meet different insulation and code requirements.

Save on duct application costs with Microlite or L·O·F Super·Fine duct wrap and duct liner. Look in the Yellow Pages of the telephone directory for the name of our nearest distributor, or write: L·O·F Glass Fibers Company, Dept. 45-75, 1810 Madison Avenue, Toledo 1, Ohio.

Time- and cost-saving steps in a typical duct application



1. Super·Fine and Microlite cut easily with an ordinary knife. No precision measuring or fitting required. In this case, adhesive is brushed on the insulation.

2. Lightweight, strong blankets of Microlite or Super·Fine handle easily on scaffolds or ladders.

MICROLITE

L·O·F GLASS FIBERS

SUPER·FINE

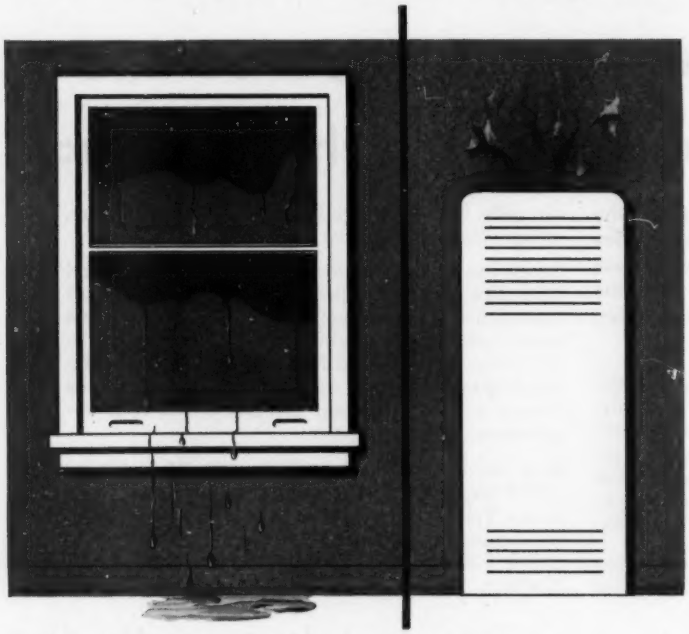
L·O·F GLASS FIBERS COMPANY

TOLEDO 1, OHIO

Makers of glass fibers by the exclusive "Electronic-Extrusion" process

3. Super·Fine and Microlite can be fitted quickly around the duct and supporting hangers. Light-gauge wire ties complete the job.

THE VENT THAT FAILED



This Could Happen To Your Customers

... if you're installing incorrect venting for their gas-burning appliances. And blistered walls... unhealthy, stale-smelling room air... condensation damage to walls and furnishings are just a few of the things that can happen when inadequate single-wall pipe, uninsulated vent connectors or other improper venting procedures are used.

The result can be equally damaging to your reputation as a dealer or contractor.

• Why take chances — install METALBESTOS throughout

This modern double-wall insulated vent features an **inner pipe** that keeps vent gases hot, assuring a strong draft for their quick, complete removal... an **outer pipe** that stays cool, preventing dangerous overheating of adjacent construction. And no mastic, tape nor heavy bracing is needed to install sturdy, lightweight Metalbestos — your insurance against customer complaints and time-consuming service calls.

For The Complete Story on Correct Gas Venting

... get your **free** copy of the VENT INSTALLATION HANDBOOK by writing Metalbestos today.

It Costs Less To Be Sure With The Best

Listed by Underwriters' Laboratories, Inc. as a Type B vent for use with approved gas appliances.

METALBESTOS DIVISION
WILLIAM WALLACE COMPANY · BELMONT, CALIF.

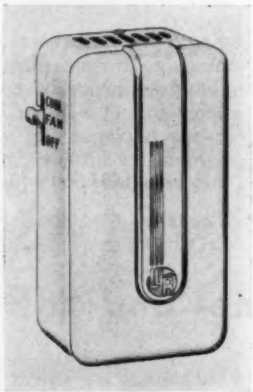
Stocked by principal jobbers in major cities. Factory warehouses in Atlanta, Dallas, Philadelphia, Des Moines, Chicago, New Orleans.

equipment developments

(*Continued from page* 128)

Air Conditioner Thermostat

ROOM THERMOSTAT for use on air conditioning applications, featuring "cooling anticipation" — White-Rodgers Electric Co., 1209 Cass Ave., St. Louis 6, Mo. Small resistor is placed in parallel with the cycling contacts of the thermostat; when contacts are



closed, no current flows through the resistor; when contacts are open, the resistor is in series with the control transformer and the motor starter, relay coil or refrigerant valve. High resistance does not permit enough current to flow through the resistor to operate the low voltage cooling equipment control but enough will pass to add a certain amount of artificial heat to the thermostat element during *off* period, enabling the thermostat to hold operating differential to a minimum and assure uniform room air temperature, the company reports.

Heavy Duty Spot Welder

MODEL 140 spot welder with adjustable lower arm and foot or air operation — Birdsell Mfg. Co., Inc., 750 San Antonio Rd., Palo Alto, Calif. A 60 amp service is said to handle production work up to two pieces of 13 gage steel. Unit is also available with timer. Welder has throat depths of 12 to 24 in., arm diameters 1¼ to 1½ in., and 10 in. maximum space between arms. Production capacity of 18 and 24 in. throat models is 14 and

THE ONLY Matched

COOLING TOWERS and CONDENSERS

The Halstead & Mitchell Cooling Towers you select are *matched* by design to work with the famous Halstead & Mitchell water-cooled Condensers. You need no longer buy a high-efficiency cooling tower to work with a low-efficiency condenser (or *vice-versa*) . . . a long-life cooling tower to work with a short-life condenser (or *vice-versa*).

Remember that every cooling tower you sell is planned to work with a water-cooled condenser—then you'll see why America's leading manufacturers of air-conditioning and refrigeration equipment have swung to Halstead & Mitchell for their original equipment needs in both these components.

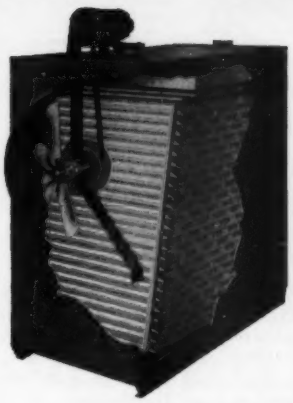
With cleanability you'll sell more. Why sell less?

20-Year Guarantee!

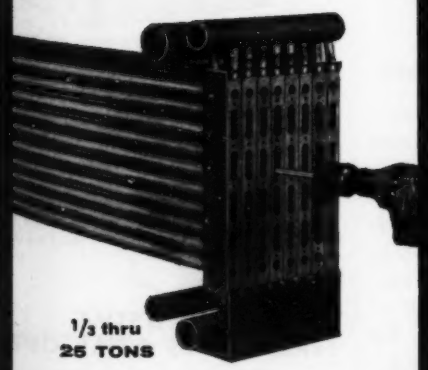
on the wetted deck surface against rotting or fungus attack

Only Halstead & Mitchell pressure-creosoting can provide a *guarantee* against immediate attack by fungus and marine parasites . . . or chemical deterioration from acids in water.

Added to this H&M exclusive are other major advantages. There's ultra-high efficiency in the gravity-type water distributing pan which eliminates extra pumping head required on spray type towers . . . and cuts down on water losses due to "atomizing" of water. And there's extra-long life in stainless steel fans . . . and sheet steel cabinets hydraulically painted with vinsynite, vinyl zinc and chlorinated rubber.



2 thru 120 TONS



1/3 thru 25 TONS

Lifetime Cleanability

The *mechanical* cleaning of H&M double-tube, counter-flow condensers means the simplest, least dangerous method of restoring new unit efficiency. Whether removing a heavy coating of sludge and scale, or a thin insulating film on the inner walls of the copper tubing, the mechanical cleaning tool restores heat transfer efficiency in a matter of minutes. The result is lowered discharge pressures . . . more heat carried off by cooling water . . . lower bills. *Only* the impurities are removed . . . the thickness of the copper wall remains intact, and the condenser gives extra years of peak service.

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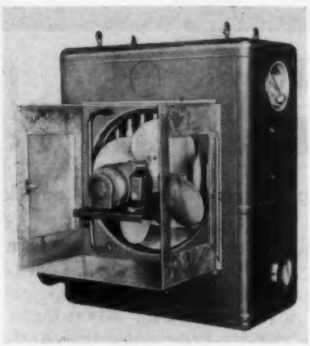
Dept. 7
Michigan City, Indiana

equipment developments

16 gage clean steel respectively. Unit is rated at 50 percent duty for continuous production.

Louvers for Unit Heaters

VERTICAL LOUVERS which fit across the face of oil fired unit heaters — Delta Heating Corp., 1 Cole St., Trenton 8, N. J. Designed to spread the heated air horizontally in any desired



proportion, the adjustable standard louvers control the horizontal flow of heated air. Application is for narrow buildings and for installations where the number of units can be decreased by the added ability to cover a larger floor area, according to the company.

Aluminum Cooling Towers

"KNOBCO" aluminum cooling towers with "aluminator" feature designed to give additional cooling while eliminating drift — Jim Knobloch Co., Newport, Ky. Squirrel cage blower is said to provide adaptability to inside or basement installation. Smaller model A335 provides 8.7 tons of refrigeration at 4 gpm and 65 deg WB temperature; model D22265 delivers 42.4 tons under same conditions. Four other models are available. "Alumatower" kit permits joining any number of standard size towers together into sectional tower of desired capacity.

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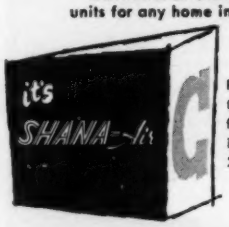

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in copper, chrome, black dull or Swedish iron — Stewart Mfg. Co., Dept. RH-1, 320 E. St. Joseph St., Indianapolis 2, Ind. Standard lengths are 30, 33, 36, 39 and 42 in. by 15 in. overall width, 12 in. top depth and 4¼ in. height. Front of hood has 45 deg mitred corners. Other sizes and matching cabinet hardware are available. Hoods are installed on wood or metal cabinets. Full length baffle and drip pan are designed for easy removal.

Gas or Oil Fired Furnace

MODEL 542 winter air conditioner with output of 209,600 Btu at bonnet for modernization of medium and

large sized homes — Thatcher Furnace Co., Centre St., Garwood, N. J. Dual fuel selection is featured; heat exchanger is heavy gage steel. Automatic humidifier is optional equipment.

Window Air Conditioner

"IMPERIAL" multi-purpose air conditioner designed for application as a window unit or used in connection with standard rectangular section ductwork — Rheem Mfg. Co., 7600 S. Kedzie Ave., Chicago 29. Oversized compressor, blower and fan, evaporator, condenser and filter are featured. Weather-resistant unit may be installed on a roof, in an attic or in almost any location conveniently situ-

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UNISHEAR

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To lower production costs, save fabricating time and make cutting jobs easier, get a Stanley Unishear for your shop. Choose from six portable and three stationary models. For more information write Stanley Electric Tools, 577 Myrtle Street, New Britain, Conn.

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The VULCAN Radiator Company
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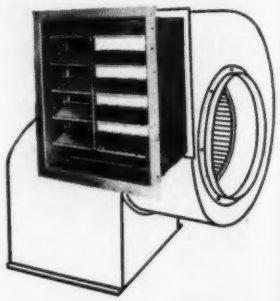
ated to the space to be conditioned. Unit is available in ¾ hp model for conditioning areas up to 500 sq ft; 1 hp unit for 700 sq ft; 1½ hp model for 900 sq ft; and 2 hp unit for 1200 sq ft, the company states.

Automatic Blower Shutter

AUTOMATIC SHUTTER designed for attachment to unit blowers — Elgo Shutter & Mfg. Co., 2738 W. Warren St., Detroit 8, Mich. Shutter is self contained in an adapter sleeve for



attachment to the blower and is built to meet customers' needs, according to the manufacturer. Louvers are of light gage aluminum with felt silencer strips and rustproof hinge rods equipped with bronze bearings. Shutter is weatherstripped to protect against rain, snow and wind, and to prevent backdrafts, according to the company.

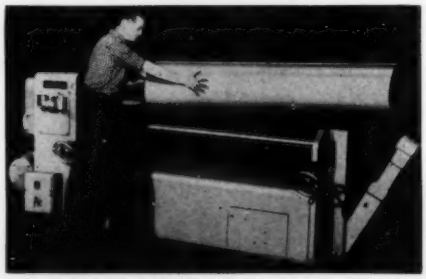
Suspended Unit Heater

MODEL DNP gas fired suspended unit heater with "delayed action" fan operation said to allow the element to heat sufficiently and eliminate cold blast starting — Day & Night Div., Carrier Corp., 700 Royal Oaks Dr., Monrovia, Calif. Free air space around heat exchanger and rubber mountings are designed to minimize noise. Unit is installed on built-in hangers with standard IPS threads. Designed for use with natural, manufactured and LP gases, unit is in eight sizes ranging in capacities from 50,000 to 225,000 Btu input, the manufacturer reports.

equipment developments *(Continued)*

Slip Roll Formers

SLIP ROLL forming machines featuring pinch type rolls designed for production of commercially true cylinders which are free from flat spots — Niagara Machine & Tool Works, 683 Northland Ave., Buffalo 11, N. Y. Two rolls feed the material; the third,



in the rear, deflects the sheet to produce the curvature. Upper feed roll, around which the sheet is formed, swings open at one end, clear of its bearing, to permit completed cylinders to be removed quickly. Working with lengths up to 120 in. and thicknesses up to ¼ in. mild steel, the machines are used in diverse applications to form container bodies, large tank segments, multiple beads, and other cylindrical, oval, rectangular and obround products. Built in heavy, medium and light capacities with 6, 4, 3, 2, 1½ and 1 in. rolls to handle general requirements, standard units can be outfitted with special attachments for particular classes of work, quantity production and other purposes.

Gas Fired Incinerator

"SUPERFLAME" automatic gas fired home incinerator which operates on natural, manufactured, mixed or LP gas — Queen Stove Works, Inc., 505 Front St., Albert Lea, Minn. Unit also accommodates normal refuse and garbage loads of multiple dwellings and small commercial buildings; a 35 lb load with 70 percent moisture content is reduced to dry fine ash in 20 hr, the company reports; ash drops into removable drawer below. Unit features pedal action to free user's hands for loading. Incinerator stands 36 in. high, 18 in. wide; casing depth is 24 in. Unit requires only gas line and flue connections.

Thermostatic Expansion Valve

MODELS V-202 and V-203 thermostatic expansion valves for air conditioning equipment, designed for high sensitivity and featuring flange type tongue and groove connectors — General Controls Co., 801 Allen Ave., Glendale 1, Calif. High sensitivity is a

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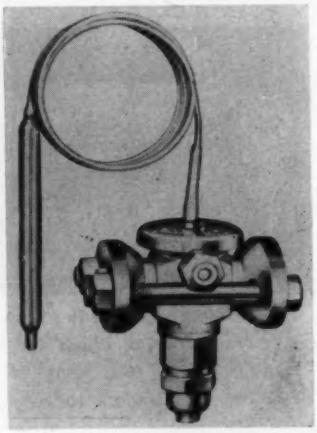
equipment developments *(Continued)*

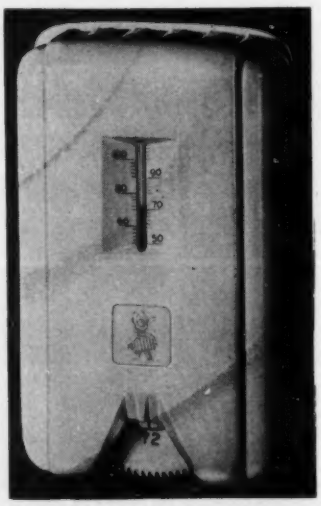
result of the packless construction of valves and stainless steel push pins designed to allow good superheat control, the company states. Flange type connectors are in ⅜, ½, and ⅝ in. inlet tube sizes, and in ⅝, ⅞, and 1⅛ in outlet tube sizes. Ca-



pacities are 2.5, 3.5 and 6.5 tons in "Freon 12" and "Genetron 12" and 3.5, 5.5 and 10.5 tons in "Freon 22" and "Genetron 141." Standard models have internal-external equalizer and adjustable superheat with ¼ in. flare. External equalizer only with ¼ in. connection is optional.

Heavy Duty Thermostat

No. 801-A3 combination thermostat with differential of ± ½ deg, designed for heating plants and air conditioning units — Sylphon Div., Robertshaw-Fulton Controls Co., Box 400, Knoxville, Tenn. Simple con-



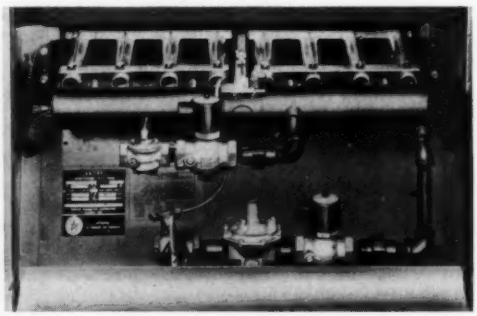
nection with manually operated summer-winter switch provides change from heating to cooling and vice versa. Unit has high switch rating of 20 amp non-

equipment developments *(Continued)*

inductive at 250 volts a-c; ¾ hp motor load at 115 volts a-c; and 1½ hp motor load at 230 volts a-c. Unit mounts directly on a standard 2 × 3 in. switch box with two screws. Thermostat has a temperature range between 64 and 80 F; it is powered by a seamless metal bellows. Plastic case which extends 1 7/16 in. from wall has circular plastic calibrated dial.

Natural and LP Gas Furnace

DUAL FUEL furnaces which operate on natural gas in mild weather and LP fuel from standby storage



in cold temperatures — Janitrol Heating & Air Conditioning Div., Surface Combustion Corp., 2375 Dorr St., Toledo 1, O. Single room thermostat automatically controls the indoor temperature for either fuel, the company states. Accessory control switch which is available automatically changes fuels when weather drops below a predetermined outside temperature setting.

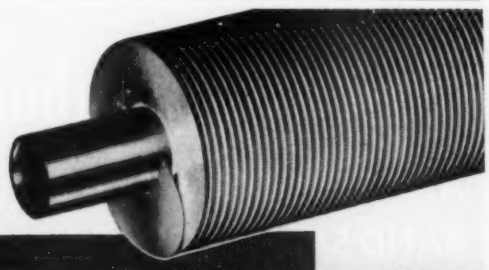
Flexible Ball Joints

PREFABRICATED sheet metal flexible ball joints in eight sizes ranging from 3 to 12 in. in diameter — Spincraft, Inc., Dept. AA, 4132 W. State St., Milwaukee. Joints can be used in exhaust systems for dust and noxious fumes and in blower systems for air conditioning and ventilating. They are of three piece construction and easily positioned; no heavy supports are necessary, according to the company. Joints are electro-zinc plated on all surfaces. The 7 and 9 in. sizes provide a total arc of 45 deg; all other sizes permit 55 deg total deflection.

Conversion Gas Burner

"SUPER-JET" conversion burner in two sizes to cover ranges from 70,000 to 110,000 Btuh and 70,000 to 150,000 Btuh input for natural gas — Downing Steel Products Co., 4005 S. Smithville, Dayton 9, O. Burner orifice can be changed rapidly to vary input; all controls are automatic and self-generating.

Even More Surface
per sq. ft. of face area
Even Less Air Friction



with the New AEROFIN Type B
Smooth-Fin Heat Exchangers

By eliminating the air resistance and turbulence caused by the wrinkles in the old-type coils, it is now possible to use almost twice as many fins per inch with no increase in air friction. These new coils therefore offer you:

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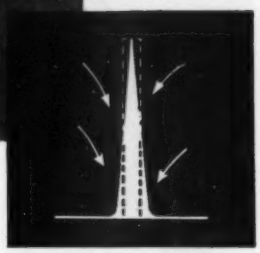

The new smooth fin is tapered, with a wide contact base which conducts sufficient heat to make the entire fin effective transfer surface. It is no longer necessary to crimp the fin to provide the required contact area.

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new literature . . .

Registers and Grilles

CATALOG No. 55-6 (76 pages) presents engineering and pricing information on registers and grilles — United States Register Co., 344 E. Burnham St., Battle Creek, Mich. Special attention has been given to the arrangement of product information to facilitate reference.

Gas Unit Heaters

SPECIFICATIONS, dimensions and construction details for suspended gas unit heaters are included in a four page bulletin, B-55-US — Reznor Mfg. Co., Mercer, Pa. Shown in the bulletin are propeller fan and centrifugal blower powered units in eight sizes from 25,000 to 200,000 Btu as well as a twin-fan 250,000 Btu model.

Home Air Conditioning Systems

A DESCRIPTION of air conditioning systems for new and existing homes, advice on selection of equipment and an analysis of proper home design for most effective and economical air conditioning are features of a 16 page, illustrated booklet (25 cents) — United States Air Conditioning Corp., 3300 Como Ave., S. E., Minneapolis 14. Entitled *Practical Pointers on Home Air Conditioning*, the booklet includes an illustrated glossary of home heating and cooling terms and a simplified description of the operation of cooling equipment.

Electronic Controls

MANUAL ON ELECTRONIC CONTROLS of heating, ventilating and air conditioning provides information on electronic equipment and components, typical system specifications and connection diagrams, and data sheets on control panels for a wide variety of building installations — Minneapolis-Honeywell Regulator Co., 2726 Fourth Ave., S., Minneapolis 8. The components section of the booklet describes standard and day-night space thermostats, insertion units for temperature measurements in ducts or liquid lines, and outdoor sensing elements which work with the indoor thermostats to adjust inside comfort according to changing outside conditions. Available motors and electronic control panels for heating, air conditioning and heating-cooling, and the company's newest electronic-pneumatic control panel are also described.

Conversion Gas Burner

FOUR PAGE FOLDER illustrates and describes "Super-Jet" conversion gas burner designed to fit any size gravity or forced air furnace — Downing Steel Products, 4005 S. Smithville, Dayton, O. Specifications are given for Model 20 covering ranges from 70,000 to 110,000 Btuh input for natural gas and for Model

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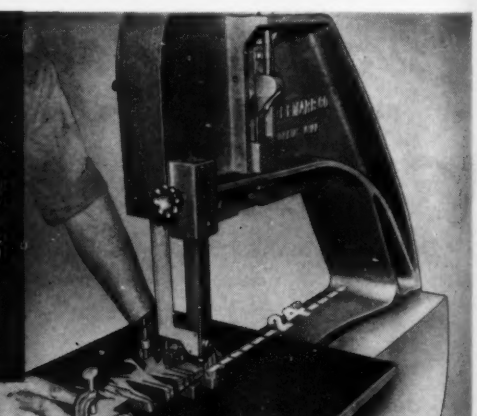

MODEL 24S— 3 wheel band saw with 24" throat. Ht., 61"; depth, 44", 22" wide, table 20" x22".

MODEL 14 SM —2 wheel band saw with 13½" throat. Ht., 62", depth, 34", 22" wide, table 20" x22".

Both Bett-Marr Models are especially designed for stacked sheet metal cutting. They have quickly adjustable blade speeds from 100 to 3000 FPM for cutting metal, wood or plastic without blade chatter. Perfect blade control assures smooth radius end straight line cuts. Blade cannot slip off wheel in operation. Cuts iron, bronze, copper, steel castings and forgings, wood, plastics, and stainless steel.

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Model 24S Bett-Marr will make center cuts on sheets up to 48 inches wide. It's big enough to do most any job—small enough to fit most any space—and costs much less than any comparable saw.

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new literature

(Continued)

20-A covering ranges from 70,000 to 150,000 Btuh. Also available is an eight page booklet giving installation, operating and maintenance instructions as well as a list of repair parts.

Furnace, Air Conditioning Blowers

SIX PAGE, POCKET SIZE FOLDER entitled *Tips on Blowers* gives information on installing, adjusting and servicing furnace or air conditioning blowers — Viking Air Conditioning Div., National-U.S. Radiator Corp., 5601 Walworth Ave., Cleveland 2. Included is data developed by the Blower Manufacturers' Association, belt and pulley manufacturers and company engineers. The folder features an exploded diagram of a blower, identifying its parts, and contains illustrated tips on attaching and adjusting belt drives, installing the blower, adjusting blower speed for heating or cooling, and ordering replacement parts. Also included are convenient checklists to be used as guides for instructing the homeowner and for giving complete blower service.

Solenoid Valves

BULLETIN RS 141 (six pages) covers solenoid valves designed for use with liquids, gases or refrigerants — A-P Controls Corp., 2450 N. 32nd St., Milwaukee 45. The valves can be used for such applications as stop and start operations, mixing and blending, metering or measuring, controlling pressure differential, controlling pressure, temperature and flow. Information is given on selection, features, coil construction, lift ratings, coil frequencies and liquid capacity.

Stationary and Motion Control Sheaves

STATIONARY "VARI-PITCH" SHEAVES for applications where speed changes are infrequent and the machine can be stopped to make the change as well as motion control sheaves for applications where frequent speed changes must be made while the sheaves are moving are described in bulletin 20B-6082C — Allis-Chalmers Mfg. Co., 1176 S. 70th St., Milwaukee. Included are a table of sizes and general dimensions of sheaves and a table of general dimensions of "Paraline" ball bearing motor bases, which are especially designed for use with the motion control sheaves.

Insulating Glass

TECHNICAL MANUAL on "Thermopane" insulating glass has been revised to include data on glazing air conditioned buildings — Libbey-Owens-Ford Glass Co., 608 Madison Ave., Toledo 3. The new section on air conditioned buildings outlines a formula for calculating solar heat gain through windows on north, east, south and west elevations and shows the comparative heat gain through windows glazed with various types of single glazing and with "Thermopane" insulating glass. Ask for Form TP-25.

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ESTAB. 1898 ■ INC. 1928

new literature

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Adhesives for Sheet Metal Work

ILLUSTRATED FOLDER covers "3M" brand adhesives, coatings and sealers for joint sealing and bonding and protecting sheet metal in manufacturing and construction — Minnesota Mining and Mfg. Co., Adhesives and Coating Div., 411 Piquette Ave., Detroit 2. Eight typical sheet metal applications for nine of the firm's materials, including weld-through sealer, metal filler and duct and ribbon sealer, are illustrated. In addition, a brief description of the characteristics of each type is given. Ask for A and C sheet metal folder.

Holder for Blueprints

FOLDER ILLUSTRATES and describes blueprint holders designed to hold building or engineering blueprints in racks or files without punching or drilling holes in the plans — Plan Hold Div., Air Comfort Co., South Gate, Calif. The holders, made of aluminum with soft plastic tips to protect against scratching desks and reference tables, will accommodate up to 100 prints. They are available in rod lengths of 36, 42 and 48 in., and in clamps lengths of 24, 30 and 36 in.

Automatic Gas Water Heaters

CONSUMER BOOKLET *How Do You Choose a Water Heater?* was designed to serve as a sales help for dealers in the promotion of automatic gas water heaters — John Wood Co., Heater & Tank Div., Conshohocken, Pa. Written in non-technical language, the booklet explains to the prospective customer what types of water heaters are best suited for various applications.

Latch for Use on Removable Parts

CATALOG C-403 covers "Paneloc" rotary latch for use on hinged or removable parts, such as inspection doors, access panels, covers, machinery doors, etc. — Scovill Mfg. Co., Waterbury 20, Conn. The latch consists of four parts — latch screw, shim plate, anchor block and latch nut. Three standard sizes are available; other sizes can be furnished on special order.

Self-Locking Nuts

FOUR PAGE ILLUSTRATED FOLDER covers "Flexloc" self-locking nuts — Standard Pressed Steel Co., Box No. 822, Jenkintown, Pa. Drawings illustrate the locking action of the nut, which can be used either as a locknut or a stop nut. Applications include use on metalworking machines, exhausts, motor housings, and fan mountings on electrical equipment.

Decimal Equivalent Chart and Calendar

CALENDAR dated from July 1, 1955 to June 30, 1956 features a decimal equivalent chart — Dayton Rogers Mfg. Co., 2830 13th Ave., S., Minneapolis 7. Send requests on company letterhead.

we hear that . . .

W. S. RHEEM II, general manager, Rheem Mfg. Co., presents a 30 year service pin to R. S. Rheem, president. Waiting to congratulate the Rheem president are D. L. Rheem, executive vice president (*right*), who received the same award, and J. P. Makenas, Chicago region manager

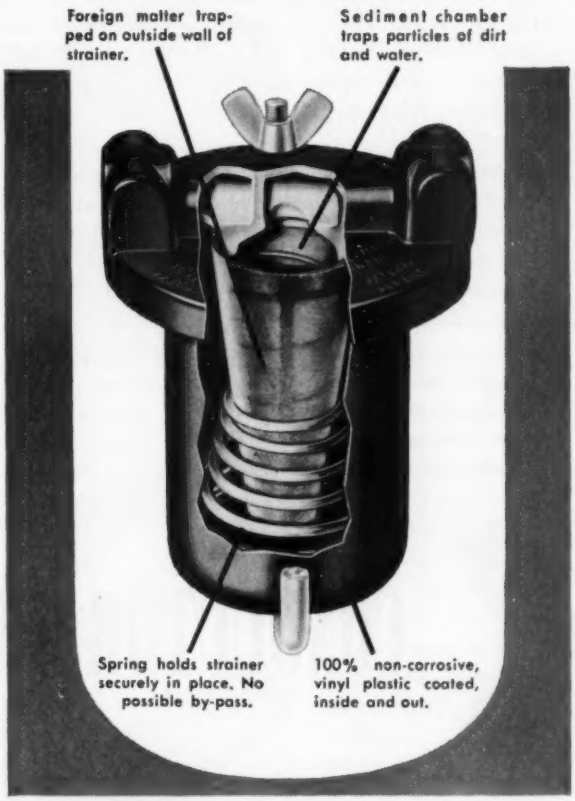
▸ R. S. RHEEM, president of Rheem Mfg. Co., recently completed 30 years of service with the company, and received a "30 year" pin from W. S. Rheem II, general manager. Awards for outstanding management performance were presented to J. P. Makenas, Chicago region manager, and L. A. Reber, New Orleans region manager.

▸ PENN CONTROLS, INC. held open house recently to celebrate the formal opening of its new engineering and research building. During the course of the three day celebration, several thousand visitors toured the plant to watch machines in operation and observe various tests being performed in the engineering laboratory. The new building provides more than 18,000 sq ft of floor space.

▸ NEW DIRECT SALES OFFICES and warehouses have been established in St. Louis and Chicago by the General Electric Co.'s welding department. Wendell E. Matchett has been appointed central district manager and acting supervisor of Chicago direct sales and Vernon H. Hartley was named manager of St. Louis direct sales. The new operations are located at 1115 E. Road, St. Louis, and 840 S. Canal St., Chicago.

▸ THE U. S. MACHINE DIVISION of Stewart-Warner Corp. presented an expanded sales and product story to more than 1000 franchised dealers and their personnel at a recent series of regional sales meetings. Shown as a new addition to the "Winkler" line was a streamlined "GO" (gas or oil) series of furnaces in basement, counterflow and vertical models. The regional itinerary included Minneapolis, Chicago, St. Louis, Cleveland, Cincinnati, Philadelphia and Boston.

How and why A-P TRAP-IT ends fuel oil problems


Foreign matter trapped on outside wall of strainer.
Sediment chamber traps particles of dirt and water.
Spring holds strainer securely in place. No possible by-pass.
100% non-corrosive, vinyl plastic coated, inside and out.

FOR ALL GRAVITY-TYPE and POWER BURNERS
using up to 5 gph of No. 1 or 2½ gph of No. 2 fuel oil

IMMEDIATELY upon installation, Trap-It begins to "clean up" fuel oil by trapping all sludge deposits, dirt and foreign particles on its 100-mesh strainer. No worry about moisture in the oil either. Ends flame failure, sluggish operation, erratic flows or leakage due to dirty oil.

Make Model 243 SY Trap-It a *key* installation on every space heater or central heating job.

Cleans in 3 steps

1. Remove two wing nuts.
2. Hold filter element under hot water for a few minutes to remove dirt and impurities.
3. Empty water and heavy residue out of cup — and reassemble.

Order from your distributor, or write:

DEPENDABLE Controls
For Air • Liquids • Gases • Refrigerants

A-P CONTROLS CORPORATION

2452 N. 32nd Street, MILWAUKEE 45, Wisconsin
COOKSVILLE, Ontario NIJMEGEN, Holland
For Export: 13 E. 40th Street, New York 16, N. Y., U.S.A.

we hear that *(Continued)*

The division has launched a recruiting drive to double its field sales organization. First step in the drive was the appointment of five regional sales managers. They are: Walter R. Leander, Indianapolis; Carl G. Lang, Naperville, Ill.; Carl L. Riddle, Norristown, Pa.; Stephen W. Boharic, Lorain, O.; and William E. Macneil, Abington, Mass.

▸ THE MITCHELL MFG. CO. is now producing a new line of packaged air conditioning units at its Chicago plant. The new units are being made in store, residential add-on and residential year 'round models, air and water cooled, and range in capacity from 2 to 7½ tons.

▸ NEXT YEAR the John Wood Co. will again sponsor the water heater promotion in connection with the "Mrs. America" contest. The company is well pleased with the publicity received this year for its part in the program.

▸ APPROXIMATELY 153 architects and engineers attended a recent dinner meeting held by Burns Heating Supply Co., Inc., Long Island City distributor, in cooperation with Jackson & Church Co. Feature of the evening was a talk by C. W. Nessell of the National Warm Air Heating and Air Conditioning Association. This was the third such meeting co-sponsored by the two firms. Alan E. Burns of the Burns company reports that he believes the meetings have contributed much to the promotion of warm air heating in a section where wet heat has been predominant for many years.

▸ CARL E. BUCHHOLZER, president of the Airtemp division of Chrysler Corp., has been elected to membership on the board of directors of the Air Conditioning and Refrigeration Institute. Mr. Buchholzer will serve for three years, representing the air conditioning and refrigeration systems section.

▸ THE COLEMAN CO., INC., which has been doing extensive research on gas powered residential air conditioning units, hopes next year to market limited production of a summer air conditioner driven by a gas motor. Work is being done by an inter-company team consisting of, in addition to the Coleman company, D. W. Onan & Sons, power plant manufacturers; Minneapolis-Honeywell Regulator Co.; and the Copeland Refrigeration Corp.

The company is now manufacturing twice as many basic air conditioning units as it was a year ago, according to Sheldon Coleman, president. Units recently added to the line include vertical coolers and 3 and 5 ton packaged commercial coolers.

CONDUCTOR ELBOWS AND SHOES

SEE YOUR JOBBER

- ALL SIZES
- ALL ANGLES
- ALL GAUGES
- ALL METALS

"Tapered to Fit"
"Galvanized after Formed"

THE CINCINNATI ELBOW CO.

4730 Madison Rd. Cincinnati 27, Ohio

we hear that *(Continued)*

POINTING OUT the features of the rotary wall flame burner is Duane W. Rouse (*right*). Interested listeners are (*from left*) Ed Cahill, J. W. Sarno and Eric King

▸ DUANE W. ROUSE, Toridheet division of the Cleveland Steel Products Corp., recently conducted a two day school on rotary wall flame oil burners in Chicago for Republic Plumbing and Supply Co. Eric King of the Republic company was host at luncheon on both days to the dealers, salesmen, installers and servicemen attending the school.

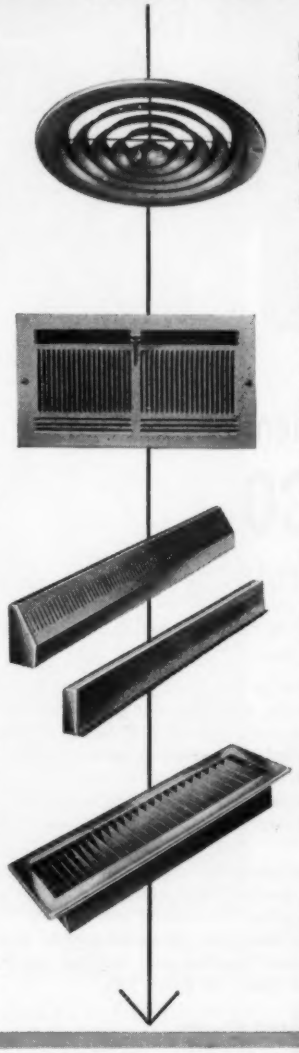
▸ F. A. JOHNSON, JR., general manager of David Levow, has been elected by the board of trustees of the New York City Community College to serve on the advisory commission in the industrial distribution department. Mr. Johnson was elected to a five year term, and the same evening was chosen by other members of the commission to head them as chairman. For the past two years he has lectured at the university and has also been a panel member on forums that are sponsored by the students.

▸ THE BOARD OF DIRECTORS of National-U.S. Radiator Corp. recently elected the following officers: Carroll M. Baumgardner, senior vice president for sales; Louis N. Hunter, senior vice president for engineering and research; and Howard B. Steggall, senior vice president for manufacturing. John C. Haas and F. M. Swartz are vice presidents for manufacturing; Marion I. Levy, vice president for the Viking division; and J. Roy Knox, vice president for the heating and air conditioning division.

▸ A DISTRIBUTOR-DEALER-CONSUMER finance plan designed to keep "Vornado" distributors and dealers in a financially competitive position has been developed by the O. A. Sutton Corp. O. A. Sutton, president, said that the company in cooperation with the Commercial Credit Corp. has made arrangements for distributors and dealers to finance floor stocks and consumer credits. Under the plan, according to the company, distributors and dealers will be able to finance inventories with minimum cash outlay.

ceiling...floor
...or anywhere between

Better Diffusion



Standard Registers *shape* comfort, *aim* it, *diffuse* it evenly

Ceiling to floor, there's a Standard Register or Diffuser for a better job of shaping, aiming or spreading conditioned air. For ceiling outlets, two Standard Ceiling Diffusers—with flush or extended louvers—send warm or cool air to every corner evenly. (Also dampers and installation rings.) And for positive control of warmed air from the floor, there's the Standard Perimeter Floor Register with exclusive dialamatic control. Select the exact diffuser, register or grille for virtually any air-directing job from the full Standard line.

MAKE REGISTER, DIFFUSER SPECIFYING EASIER

Write for the Standard Register and Grille Catalog now!

Standard Stamping & Perforating Company
Dept. AA-7
3137 W. 49th Place, Chicago 32, Illinois
Please send me your catalog No. 54, on Registers and Grilles.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE_____

Standard STAMPING & PERFORATING COMPANY
3137 W. 49TH PLACE, CHICAGO 32, ILLINOIS

we depend
on TI-CO®
for our profit!

—says **H. G. Prizant,** owner and manager of **H. G. Prizant Co.,** heating and ventilating contractors.

"Take this intricate installation in the new University of Illinois Dentistry Building, for example, although the galvanized steel cost less than $10, there was probably about $250 worth of labor in this piece. If the sheets cracked along the lock seams, or even if their zinc coating had flaked off severely, as is often the case when assembling ordinary galvanized, it would have meant redoing the entire job. You can imagine what that would have done to our profit picture."

Mr. Prizant, like all users of Inland TI-CO galvanized sheets for heating and ventilating jobs, praises TI-CO's ability to take the tightest Pittsburgh lock seam without cracking and without the flaking of the zinc coating. He likes, too, the uniformity of TI-CO sheets which gives him the same bending and forming quality and the same bright, spangled finish, for every job.

New Inland TI-CO galvanized sheets . . .

- *non-flaking.* Galvanized by a patented, continuous process, eliminating brittle iron-zinc layer that causes "pot dipped" galvanized coating to flake.
- always uniform.
- costs no more!

Ask your dealer for Inland TI-CO. Look for this stencil on all your galvanized sheets.

INLAND TI-CO®

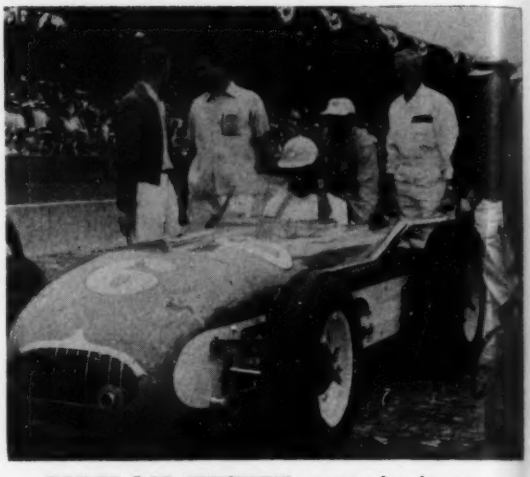
Write: Dick Killelea, Dept. 252-A

INLAND STEEL COMPANY

38 South Dearborn Street • Chicago 3, Illinois

Sales Offices: Chicago • Milwaukee • St. Paul • Davenport St. Louis • Kansas City • Indianapolis • Detroit • New York

we hear that *(Continued)*



DRIVER BOB SWEIKERT prepares for the start. Waiting to assist him are John Zink (dark jacket and cap) and crew members of the racing team

▸ JOHN ZINK, vice president of John Zink Co., had the winning car in the recent Indianapolis 500 mile race. This was the sixth Indianapolis race in which one of his cars has been entered.

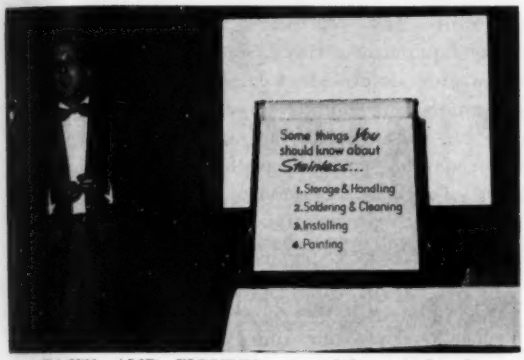
▸ IN CONNECTION with the establishment of national headquarters of the Bryant division of Carrier Corp. in Indianapolis, the firm has acquired an industrial site for administration, sales, engineering and research offices across from the Bryant manufacturing plant. There are two buildings on the site, and as soon as possible the division plans to move divisional engineering, laboratories, model shop and advertising activities into the existing main building. Following the completion of two wings, adminstration and sales will be transferred from the present downtown offices at 48 Monument Circle.

▸ PERFECTION INDUSTRIES, INC. plans to merge its operations with those of the Hupp Corp. Donald S. Smith will continue in charge of the Perfection company's activities.

▸ THE COPPER & BRASS RESEARCH Association recently held its 33rd annual meeting at Hot Springs, Va. Austin R. Zender, executive vice president of Bridgeport Brass Co., was elected president of the association.

▸ SIXTY SALES ENGINEERS from various parts of the U. S. and Canada recently gathered in South Norwalk, Conn. to attend the annual sales meeting of the Prat-Daniel Corp. The plant was converted into an exhibit hall for the duration of the meeting and all models of warm air heating equipment manufactured by the company were on display and in operation. At an

achievement dinner held on the second day of the three day meeting, a sales plaque was presented to the Engineering Products Corp., Fairfield, Conn. which led all other sales districts in 1954 sales of "Thermobloc" heating equipment.



FACTS AND FIGURES on stainless steel rain equipment are brought out by Russ Seiple, Berger Div., Republic Steel Corp. at recent sales clinic

▸ BERGER DIV., Republic Steel Corp., recently held a series of stainless steel rain carrying equipment sales clinics, ranging from Grand Rapids, Mich. to Greensboro, N. C. Attendance has been as high as 500 contractors and wholesalers. Demonstrations and audience participation in soldering gutters and conductor pipe of stainless steel were the highlights of the four hour meetings conducted by national sales manager Russ Seiple.

▸ THE YOUNG & BERTKE CO., Cincinnati fabricators of dust collecting and fume removal systems as well as air conditioning and ventilating systems, recently celebrated its 35th birthday.

▸ THE SALES FORCE of Van-Packer Corp. is now equipped with a specially designed sample case that augments the company's sales story with actual chimney materials. The new case contains both product literature and masonry chimney parts.

▸ L. O. F. GLASS FIBERS CO., which recently merged with Glass Fibers Inc., has developed a new trademark to identify its products. To symbolize the method of drawing fine fibers from molten glass, vertical lines are shown descending from the "O" in the company name.

▸ DREIS & KRUMP MFG. CO. has developed extended payment and lease plans for purchasing or leasing "Chicago" press brakes, "SS" presses, and power bending brakes. An option of four extended payment plans with small down payment and the balance in

• for Greater Strength
• for Longer Wear
• for *Lower Cost*

Zatko
One Piece
Stamped Steel
V-BELT
PULLEY
for
Heating and
Air Conditioning
Equipment

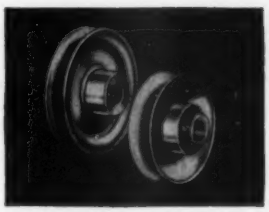
Standard Fractional Horse Power V-Belt Pulleys. All sizes in stock.

Variable Pitch. Allows Speed Variation up to 30%. OD's from 3¼" to 3½".

ALL PULLEYS BROACHED AND 100% INSPECTED

Used by a majority of the largest Automobile and Heating-Air Conditioning Manufacturers.

Write for literature and prices



Zatko
Metal Products Co.
20850 St. Clair Ave., Cleveland 17, Ohio

we hear that *(Continued)*

monthly payments over one, two, three or four years depending on the plans selected is offered. There are four lease plans, with or without option to buy, each extending over a term of nine years.

▸ STABLER & NELSON, INC., Seattle distributors, sponsored the Century Engineering Corp.'s exhibit of heating products at the recent Pacific Coast Oil Heat Show held in Seattle.

Aircon Supply Co., 1143-45 W. 69th St., Chicago has been appointed a wholesale-distributor of the Century company's heating and cooling equipment. The Aircon company will warehouse oil and gas furnaces, conversion oil and gas burners, water heaters, combination heating and cooling units and residential air conditioning units.

▸ WEATHERMAKER VILLAGE, West Covina, Calif., the first major development in the area featuring year 'round air conditioning as standard equipment, was recently opened to the public. Carrier Corp. reports that the air conditioning units used are mass produced and designed to be economically built into moderate priced homes. The houses, in the $16,000 class, have eight rooms and feature many new concepts in home planning that are possible only with complete air conditioning. Also recently opened to the public was Research House 1955, sponsored by Associated Architectural Publications. In the research house, manufacturers of various types of household equipment place their "ideas of the future" for testing and inspection by the public. A "Weathermaker" unit provides the air conditioning.

The company reports that its expanded national buyer program has been "extremely successful" in boosting dealer sales of air conditioning equipment to chain stores. John M. Bickel, vice president of the Unitary Equipment division, states that, in operation, the new program provides a local dealer with personal representation in bidding on an installation in his territory — even though the buying headquarters of a chain may be located in another state or across the country. To effect this service, the firm has placed national buyer representatives in each of its 26 district and branch sales offices in the United States.

▸ SHANA MFG., INC. has developed an air conditioning educational program aimed at consumers as well as dealers. The two forked program consists of a campaign which will provide dealers with tools for educating and ultimately selling the consumer and a second campaign designed to inform home owners about the various types of air conditioning available in today's market. Included in the material the company has prepared are brochures on the healthful aspects of air conditioning, consumer literature on advantages of living in and adjusting to an air con-

Take three seconds to learn this lesson and you have acquired the basis for a lifetime of profit. There is nothing new about it—it has been taught for years by the best of all teachers . . . experience.

For every one of the past 30 years, refrigeration and air conditioning experts have specified far more Marley cooling towers than those of any other make. They know that only with Marley towers can they achieve a perfectly balanced job where price, performance and durability mean greatest customer satisfaction.

Experienced purchasers know that every cooling tower installation should have individual consideration as to type, location and capacity. And they know that there is a Marley tower to fit every job: induced draft, forced draft, natural draft; for installation indoors or out, and a complete size range of each.

Examine the 1955 Marley line that includes all that's modern in cooling towers. You'll discover that "when you say 'Marley' you've said it all!"

The Marley Company

Kansas City, Missouri

for

SPECIFICATION

and

BUYING INFORMATION

Use your complete, up-to-date

JANUARY DIRECTORY ISSUE

Your job will be a lot easier if you'll keep the January Directory issue of American Artisan constantly available for handy reference. It's one of your most valuable tools — one which will save you many hours of looking up the products you need for your various jobs. It's the ONE complete, up-to-date, readily accessible source of product information on who makes the furnaces, snips, controls, etc., you need — and where they're located. They're identified by trade names, too. EVERY product is listed, alphabetically arranged and printed on a distinctive yellow stock for easy reading and reference.

Keep it handy . . . the time you save with it can be used to advantage in other ways.

. . . here's what other contractors and dealers have to say . . .

"Your Directory issue is an excellent buyers' guide. We use it a great many times during the course of the year."

"We find both Directory and Advertising Section helpful. The advertising gives us the product details we need."

"Your directory stays in this office until the next January issue comes along. Numerous times we refer to it."

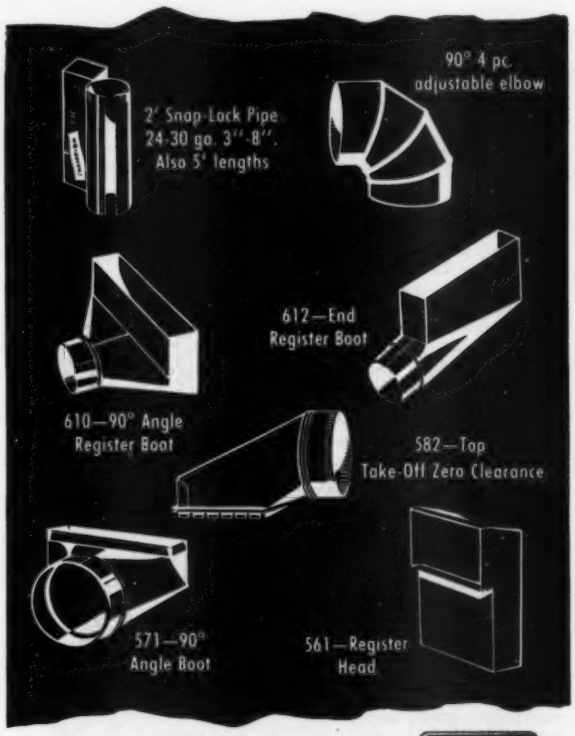
"In our work, we make use of your Directory time and time again. Our reference file would not be complete without it."

REMEMBER — EVERY product is right at your fingertips

AMERICAN ARTISAN
6 North Michigan Ave. Chicago 2, Ill.

CHAMPION
time-savers!

Less shop time and less job time puts more money in your profit column! That's why heating men order Champion pipe and fittings. Machine fabrication in the modern Champion plant gives you precision fit that cuts hours from the job — makes more money for you! Completely cartoned for economical shipping, easy handling, compact storage.



There are many more profit-makers in the complete CHAMPION line! Order Champion for your next job!

AIR DISTRIBUTION INSTITUTE ADI STANDARDIZED FITTINGS

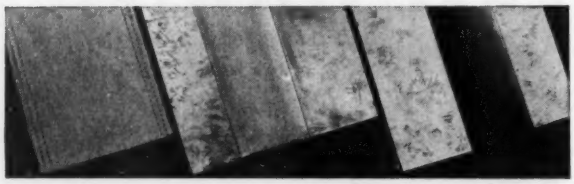
CHAMPION

CHAMPION FURNACE PIPE COMPANY
211 Eaton Street Peoria, Illinois

Which

TYPE*

Do YOU Prefer?



FLEXI-DUCT VIBRA-STOP

*Grant Wilson

FLEXIBLE DUCT CONNECTIONS

Stop system noise on Heating, Ventilating and Air Conditioning installations. Isolate mechanical rattles, starting vibrations, "on and off" cycle sounds, shaft whine, fan hum, etc. at their source. Apply either of the Grant Wilson Flexible Duct Connections between blower or plenum and furnace casing, between take-offs and main or branches . . . the resultant quietness of system operation satisfies customers, leads to more jobs, without call-backs.

FLEXI-DUCT . . .

Grant Wilson's Woven Asbestos Flexible Tape. *The choice of those who want rock-bottom economy combined with top efficiency.* Handy 50 foot rolls, 6 inches wide, with selvaged edges. Can be taped or bolted to equipment or duct work.

FLEXI-DUCT comes in convenient hand-size carton.

VIBRA-STOP . . .

Asbestos or Canvas, 4" wide, factory sealed to 4" galvanized metal on one side, 3" on the other. *Preferred by those who want the quickest, easiest installation.* 100 foot roll pulls out as needed from special carton.

Asbestos used is Underwriters' grade and meets Federal specs. MIL-C-4177. Canvas, also Underwriters' grade, meets Federal specs. MIL-D-10860.

Write today for full information, FREE samples and prices.

VIBRA-STOP is packed in handy carton with core for free unrolling and easy carrying.

Grant Wilson inc.

ASBESTOS and INSULATING MATERIALS

141 WEST JACKSON BLVD • CHICAGO 4 ILLINOIS

we hear that *(Continued)*

ditioned home, installation manuals, phonograph recordings on how to size and sell an air conditioning installation, press releases usable by dealers in local newspapers, special technical and sales manuals, etc.

WELCOMING speaker Howard K. Beck to Georgia sheet metal contractors' convention is Carolyn Whitlock. Bob Chisholm waits his turn

▶ HOWARD K. BECK, Jackson & Church Co., was a member on the warm air heating panel during the recent convention held by the Roofing and Sheet Metal Contractors' Association of Georgia. Mr. Beck outlined the many uses for large size furnaces in industrial applications.

▶ SALES AND SERVICE ENGINEERS graduating from Minneapolis-Honeywell Regulator Co.'s eastern division training school in Philadelphia have been assigned to 27 branch offices located in 25 cities in the U. S., Canada and Germany. The class, the 47th in the school's history, was composed of nine new salesmen and 27 service engineers. J. A. Robinson, field sales manager, said the emphasis on service engineers was influenced by the shortage of skilled technicians to service instruments and controls.

▶ THE AMERICAN IRON AND STEEL INSTITUTE medal has been awarded to Arthur P. Woods, Jr., a research engineer with Armco Steel Corp. The medal was awarded to Mr. Woods for the excellence of his paper, titled *Some Statistical Methods Used in Studies of Steel Plant Operations.*

▶ A $1,600,000 EXPANSION PROGRAM to result in construction of a new fabricating and office building has been authorized by the board of directors of the Lau Blower Co. The new building, which will be added to the present Dayton plant, will increase office space by 20,000 sq ft and factory area by 45,000 sq ft. Construction is expected to be completed late this year.

Guaranteed Savings on Steel

...guaranteed satisfaction, too!

ROLLED STEEL PRODUCTS can save you over 20% on all your steel needs. Any size, any type, any gauge. No order too small or too big. Immediate delivery.

WE UNCONDITIONALLY GUARANTEE YOUR SATISFACTION ON EVERY PIECE OF STEEL LEAVING OUR WAREHOUSE.

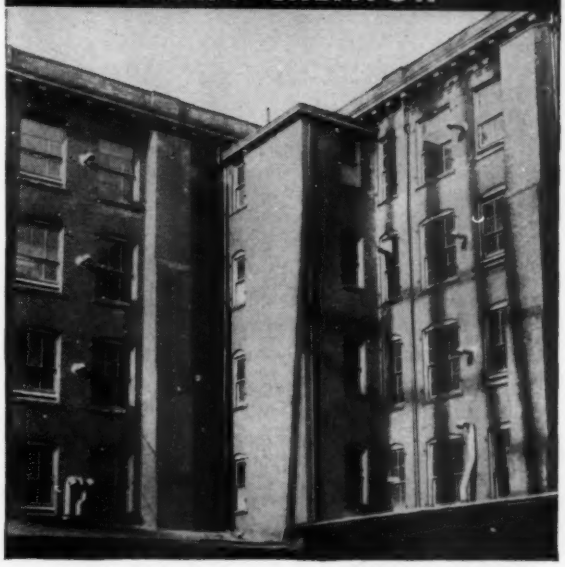
Find out how you can save as 4,020 other firms throughout the country are doing. Call and reverse the charges to us today!

Another of the typical MONEY SAVING values from ROLLED STEEL PRODUCTS.
45,000 lbs. 26" x 78" galvanized sheets
$7.75 net/cwt.
F.O.B. Skokie, Illinois.
21,000 lbs. 28" x 96" galvanized sheets
$7.75 net/cwt.
F.O.B. Skokie, Illinois.
Standard size sheets in all gauges available at slightly higher prices.

Rolled Steel Products
Division of Emergency Steel Service Corporation
Distributors of: SHEETS—PLATES—BARS—STRUCTURALS—STRIP
GENERAL OFFICES & WAREHOUSE
7415 St. Louis Ave. Skokie, Illinois
ORchard 3-7400

What? Horizontal Furnace Vents? Certainly, with the...

quickdraft
DRAFT CREATOR



Over and over again in our advertising we have been proclaiming the fact that the shorter the chimney the better the draft—with *quickdraft.*

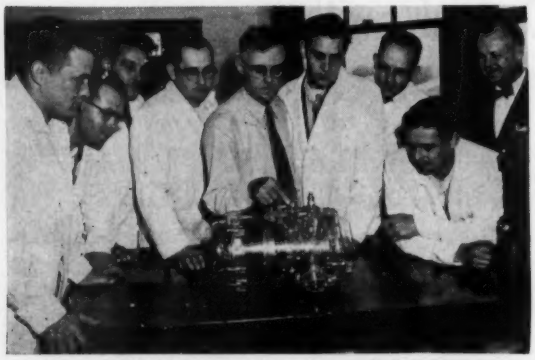
Now we go a step farther. The photo above shows that actually no chimney is needed. In the warehouse shown here, steam heating equipment was replaced by 29 oil-fired furnaces. All were vented horizontally with *quickdraft* supplying ample draft even when the furnaces are fired to capacity.

The X-Ray view below shows why *quickdraft* alone can claim DRAFT INDUCTION WITH NO OBSTRUCTION. The Venturi system, which acts as an aspirator, sets up no obstruction to flow of flue gases. No moving parts to corrode or collect soot, no bearings exposed to heat or combustion by-products.

Try *quickdraft* on your next warm-air heating job—large or small, for any fuel. It's the perfect solution to the draft problem with low chimneys, a characteristic feature of the modern ranch house.

For complete literature, installation manual and name of nearest jobber, write to Quickdraft Co., Dept. V, 1150 So. Erie Blvd., Hamilton, Ohio.

we hear that *(Continued)*



SERVICEMEN examine "the heart of the air conditioner," the compressor, at a factory training school held by the Airtemp division of Chrysler Corp.

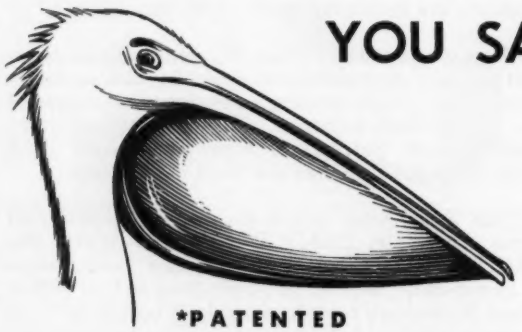
▸ THE AIRTEMP DIVISION of Chrysler Corp. has been conducting a series of week-long schools for cooling dealer servicemen at its factory in Dayton. Students first observe the units being factory assembled and tested. Instructors then cover parts and operation during classroom sessions. Final test for each serviceman is the tearing down and reassembling of a complete compressor.

M. T. Bard, sales manager for the division, reports that results of a recent sales contest for wholesale salesmen of heating and air conditioning distributors indicate that business is equally good throughout the country. "Credits won as the result of sales, while high, are also extremely uniform on a countrywide basis," he said, "indicating that there are no sectional slow or soft spots as far as the cooling and heating business picture is concerned."

The division has recently developed a new series of movie trailers and television commercials for distributors and dealers. The series consists of: ten 26-second movie trailers and 14 TV commercial films on residential air conditioning and heating; four movie trailers and four TV commercials on packaged air conditioners; three movie trailers and 12 TV commercials on room air conditioners.

▸ THE ANNUAL DINNER MEETING of the Kirk & Blum Mfg. Co.'s "25 Year Club" was recently held at the Cincinnati Club. New members of the club who were presented with gold watches are B. J. Wilke and L. H. Stortz. The club now has 49 members with a total of 1505 years of service.

▸ MORE THAN 170 MEMBERS of the New York section of the American Society of Refrigerating Engineers recently gathered at the plant of the Typhoon Air Conditioning Co., Inc. for their final meeting of the year. Features of the meeting included a tour



YOU SAID A MOUTHFUL!

"BRANDES*!!

*PATENTED

Your best buy in

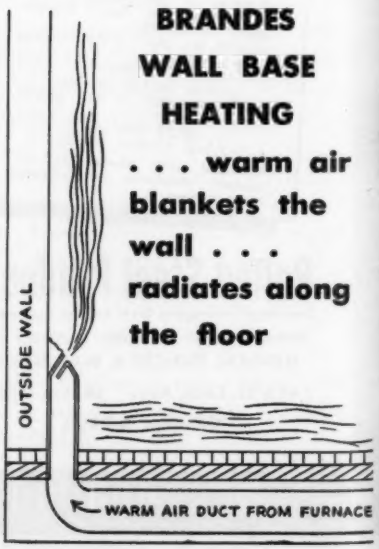
WALL BASE HEATING

No matter what your income bracket, Brandes can meet your demands. Three distinct lines and a total of fourteen different sizes to choose from makes Brandes Wall Base Heating the most complete line on the market today. With Brandes Wall Base Heating you get the maximum in beauty and performance . . . at reasonable prices, too!

THE BRANDES COMPANY

2046 Winnebago Street, Madison 4, Wisconsin

Write for Catalog



Only WALKER Has It!

Automatic Draft Control with

Full Protection at All Vital Points!

Pat. Pending

Royal Purple Model

Think of it! A draft control that's absolutely impregnable to soot, carbon, corrosion and dust . . . one that will give years of accurate, trouble-free service in spite of the most adverse operating conditions! The new Walker ROYAL PURPLE model is the first—and only—draft control with positive, all-point protection. These revolutionary improvements can't be copied or duplicated — they're exclusively Walker because of pending patents.

The Royal Purple — Hit of the Philadelphia Show

THE INSIDE STORY

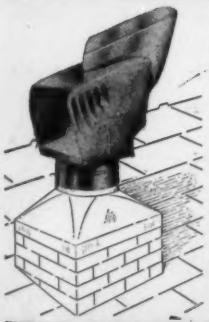
The weight adjustment assembly on the ROYAL PURPLE model is sealed in by a protective housing which keeps mechanism absolutely free from dirt deposits. Unretouched photo at right shows back of vane and housing after more than a year's service. Cutaway shows spotless condition of sealed-in weight adjustment assembly. Clean, corrosion-free operating parts assure ease of adjustment at any time.

This front view of an actual installation shows location of pivot pins which control vane movement. Notice how they are located on front face of damper and set back, away from edge. Box-type hinges completely seal delicate knife-edge pivots, keeping them clean and sensitive even after years and years of service.

For complete details on this sensational new development in draft control, see your jobber or write Walker Manufacturing and Sales Corporation.

Another Outstanding Walker Development

VENTURI-TOP CHIMNEY CAP



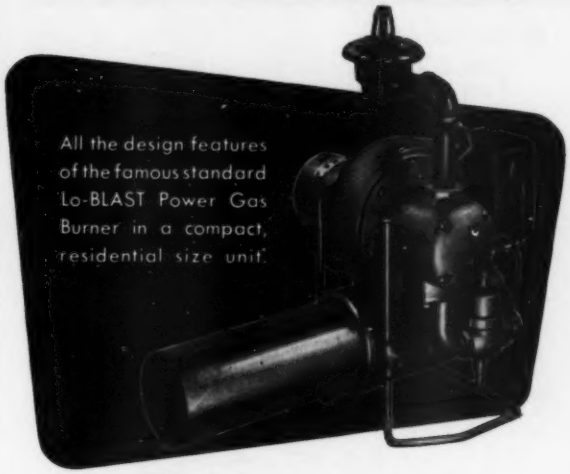
Ideal for both heating (gas, oil or coal) and ventilating applications. Directional vane keeps throat of vent facing into wind for maximum draft control. Sloping-throat design prevents back drafts and actually increases draft effectiveness by constricting it as it passes over chimney opening. Unit rotates on a friction-free, hardened-steel ball bearing. Pivot is also of hardened steel to assure lifetime operation. Ring guide bearing in pivot post keeps cap absolutely perpendicular—doesn't sag or lean. Streamlined design is both attractive and functional — a combination which makes it a favorite with today's architects.

Walker Manufacturing and Sales Corp.

1730 Penn St. St. Joseph, Mo.

"mighty mite"

OF CONVERSION GAS BURNERS



LO-BLAST ECONOMITE

Averages 10% less in fuel consumption • easy to install • safe in operation • no "pop" at start and stop • easy to service • long-lived. Capacities from 75,000 to 500,000 BTU.

Economite power burner design means perfect combustion—fuel saved. It assures quiet operation, no combustion roar. Shipped to you completely assembled—equipped with every device for safe operation—factory tested on gas.

All parts are accessible—there's nothing in the fire box but the fire. Simplicity of design and durable construction. cuts service to a bare minimum.

When you see an Economite, you'll realize that here, indeed, is an utterly *different and better* gas burner.

DEALERS!

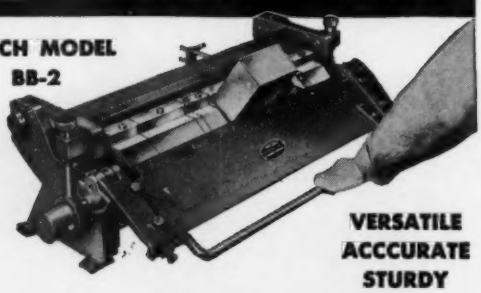
Write today for full information on this outstanding gas burner. Nothing like it on the market—a sure profit maker!

STANDARD Lo-BLAST BURNER

Approved by leading utility companies and consulting engineers. Capacities to 20,000,000 BTU.

MID-CONTINENT
METAL PRODUCTS CO.
1960 N. Clybourn Ave., Chicago 14, Ill.

Bending Sheet Metal
UNIVERSAL BOX and PAN
CHICAGO **BENDING BRAKE**



BENCH MODEL
BB-2

VERSATILE
ACCCURATE
STURDY

This CHICAGO hand bending brake is ideal for bending sheet metal up to 16 gauge and 24" wide. Model and experimental shops, production departments find this machine unmatched for single pieces or production runs in folding, box and pan work, and a limitless variety of straight bending operations. Very little experience is required to do accurate and fast work.

Write for full particulars

Steel Bending Brakes for over 50 Years 5568

DREIS & KRUMP MANUFACTURING COMPANY
CHICAGO
7404 S. Loomis Blvd., Chicago 36, Ill.

NOW is the TIME to "CLEAN-UP"
with a
GRAND RAPIDS FURNACE CLEANER

Act Now! Get in on this year's cleaning profits. *Order a Grand Rapids Furnace Cleaner.*

IT'S FAST—Handles twice as many jobs as the ordinary furnace cleaner.

IT'S THOROUGH—High velocity suction completely removes ashes, soot, scale and dirt from every type of heating plant.

IT'S COMPLETE—A packaged unit with practical cleaning attachments designed for fast, easy cleaning.

IT'S PROFITABLE—The trouble-free operation and speedy service of the Grand Rapids Furnace Cleaner puts extra profits in your pockets.

Send today for complete information about the Grand Rapids Furnace Cleaner.

DOYLE VACUUM CLEANER CO.
227 Stevens St., S.W. Grand Rapids 7, Michigan

we hear that *(Continued)*

of the company's plant and a talk by Arthur H. Farr, chief application engineer, on *Air-cooled Condensers as Applied to Residential and Commercial Installations.*

DEMONSTRATING how to lay out and notch flat sheets for duct work is Lou Ranch, who uses a station wagon to carry his display to contractor meetings

▸ LOU RANCH, Engel Sheet Metal Equipment, Inc. has mounted a small size "Duct Master", a sheet metal notching, cutting and layout tool, to a station wagon which he uses to call on contractors and dealers. Recently he toured the state of Georgia and demonstrated the tool to the contractors attending the annual convention of the Roofing and Sheet Metal Contractors' Association of Georgia.

▸ INLAND STEEL CO. set a new production record in May with an output of 462,032 net tons of steel ingots, representing 108.8 percent of the rated capacity of the company's Indiana Harbor, Ind. steel works.

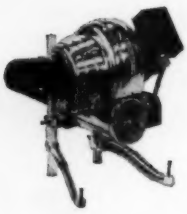
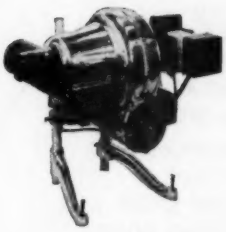
▸ THE ROBERTSON HEATING SUPPLY CO. recently held its third annual home show in Alliance, O. The show featured 62 booths where merchandise of 100 manufacturers whose products are distributed by the Robertson company was displayed.

▸ FRANK F. ELLIOTT, senior vice president of sales for Crane Co. since 1952, has been elected president and chief executive officer of the company. He succeeds John L. Holloway, who resigned as president and director because of ill health. Mr. Elliott joined the company in 1922 at the Los Angeles branch.

▸ CHARLES G. BEAVERS, JR. has been elected president of Follansbee Metals, Inc. Mr. Beavers is also president of Brubaker Tool Corp. of Millersburg, Pa.

▸ THE GENERAL ELECTRIC CO. provided the heat pumps which supply heating and air conditioning to a 431 home project in Fullerton, Calif. According to the company, this is the largest sale of heat pumps ever made.

Wisconsin BURNERS

MODEL O **MODEL A**

- A complete line. . .with Wisconsin Burners you can offer your customers a choice of 5 sizes. . . . from 0.65 G.P.H. to 25.00 G.P.H.

MODEL B-41

- Every Wisconsin Burner is factory tested under actual firing conditions. Their reputation for quality has made them a leader in the field.

MODEL B-51 **MODEL B-61**

- Available with the famous, efficient Shell Combustion Head.

FOR INFORMATION ON AVAILABLE TERRITORIES, WRITE

WISCONSIN OIL BURNER CO.

2720 EMIL ST. • MADISON 5, WISCONSIN

Manufacturers' Agents

Are you interested in securing additional lines?

We are occasionally asked by our manufacturer advertisers to suggest the names of manufacturers' agents in various sections of the country whom they can contact in regard to representation of their residential heating air conditioning, and sheet metal products.

If you would like your name listed in our records for inquiries we may receive on your territory, we invite you to write us. There is no charge in connection with this service.

AMERICAN ARTISAN

6 N. Michigan Ave., Chicago 2, Ill.

FOR FLEXIBLE CONNECTIONS IN

● DUST COLLECTION ● FUME CONTROL
● AIR-CONDITIONING ● MATERIALS HANDLING

PORTOVENT® ◀◀◀ USE ▶▶▶ FLEXAUST®

Spiral wire reinforced
DUCT

Sizes 3" to 36" ID Wide Pitch type *RETRACTABLE*

Flexaust hoses and Portovent ducts are made with strong cotton or nylon fabrics, impregnated and coated with neoprene compounds. Seams are fully bonded. Other important features are—

- ✔ EXTREME FLEXIBILITY
- ✔ AIRTIGHT — STRONG
- ✔ LIGHTWEIGHT — DURABLE
- ✔ VERY EASY TO HANDLE AND INSTALL

STOCKS IN PRINCIPAL CITIES

Spiral wire reinforced
HOSE

Sizes 1¼" to 36" ID Close pitch type

WRITE TODAY FOR

Bulletin #40 — General information
Bulletin #41 — Accessories and Installation Data
Bulletin #42 — Technical data on products and service.
Bulletin #43 — Application data and type selector guide.
Bulletin #44 — Friction loss data.
Prices lists.

THE FLEXAUST COMPANY, Dept. AA-7

100 PARK AVENUE NEW YORK 17, NEW YORK

In to stay when you use P-K
TRADE MARK REG. U.S. PAT. OFF.

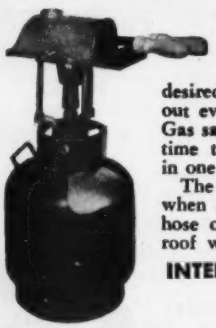
Hardened
Screwnails

for fastening
SHEET METAL to WOOD
WOOD to WOOD
or other fastenings
where you need
NAIL DRIVING SPEED with
SCREW HOLDING POWER

Ask your P-K Distributor for samples and the SCREWNAIL folder, or write: Parker-Kalon Division, General American Transportation Corporation, 200 Varick St., New York 14.

PARKER-KALON®
FASTENERS

INSTANT LIGHTING Insto-Gas
T.M. REG. U.S. PAT. OFF.
SOLDERING IRON HEATER



Sheet metal contractors can now have hot soldering irons in 2 minutes and with Insto-Gas they can be kept at the desired temperature all day long without even looking at the heater. Insto-Gas saves 40% on fuel cost and enough time to pay for the entire equipment in one week's operation.

The Insto-Gas soldering iron heater when attached to the cylinder by 50-ft hose can be operated on a scaffold or roof without moving the cylinder.

INTERNALLY FIRED SOLDERING IRONS

These Insto-Gas soldering irons are designed for continuous operation with no stopping to change irons. Made in two sizes; the No 1-S (2) for fine work and the No 2-S (5) for heavy soldering.

Listed by Underwriters Laboratories and Factory Mutuals Laboratories

Write For Free Folder

INSTO-GAS CORPORATION
DETROIT 7, MICHIGAN
ASK FOR NEW FOLDER ON INSTO-HOT SALAMANDERS

appointments . . .

▶ JAMES F. DEANE as vice president and general manager of International Sales Co. Mr. Deane has been with the company since 1939. H. C. Schmitt has been named engineer in charge of air conditioning. Prior to joining the company, he was with the Lennox Furnace Co. and before that was associated with Westinghouse Electric Corp.

James F. Deane

Robert V. Main

▶ ROBERT V. MAIN as manager of manufacturer sales for the Viking Air Conditioning division of National-U.S. Radiator Corp. Mr. Main has been sales manager of the blower division for the past two years. John A. Green has been named manager of distributor sales, in which capacity he will have charge of sales

TIME SAVING
E-Z-ON
DAMPER REGULATORS
PERMIT
INSTANT ASSEMBLY

(Shown— head piece of #27 E-Z-ON)

It's the little things that make the Big difference!

Advanced design of E-Z-ON damper regulators permits on-the-job Assembly with only a hammer — no drilling — no rivets. This 16 gauge steel regulator is simply positioned on the damper by sliding it over the scribed center line. The E-Z-ON accurately stays in position until a hammer blow drives the sharp prongs through the damper (E-Z-ON prongs will pierce 22 gauge metal.)

E-Z-ONS PROVED MORE PROFITABLE

Job Histories prove that your apprentice or journeyman can save two-thirds of their damper makeup time with E-Z-ONS.

M. A. GERETT Corp.
724 W. Winnebago, Milwaukee, Wis.

Stocked in CANADA by
THERMIDAIRE CORP.
7-9 Cumberland Street, Toronto

STYLE & SIZE
Famous E-Z-ON standard design No. 27
Solid end tail piece, threaded head piece and wing nut — 3/8" bearing.
Superior E-Z-ON
"Snap-Tite" Design No. 29
Tail piece with retractable snap end bearing, threaded head piece and wing nut — 3/8" bearing.

appointments *(Continued)*

of heating and cooling equipment to company distributors. He has been with the division since 1946.

L. P. Hanson

R. P. Kelley

L. P. HANSON as administrative vice president of United States Air Conditioning Corp. Mr. Hanson, who has served since 1947 as vice president in charge of sales, will function as assistant to the president and as vice president in charge of engineering. He has been with the firm since 1929. R. P. Kelley, formerly vice president and manager of the appliance division of Motor Power Equipment Co., has joined the firm as general sales manager. Mr. Kelley has also acted as a district supervisor and merchandise manager for Westinghouse Electric Co. General Heating & Air Con-

Make Stronger Fastenings this easy way

P-K
TRADE MARK REG. U.S. PAT. OFF.

Hardened
Masonry Nails

DRIVE EASILY into mortar, cinder blocks, and other soft masonry without pilot holes . . . into predrilled holes in harder materials. **HARDNESS and TOUGHNESS** perfectly balanced . . . they drive in straight to stay tight, even under shock or vibration.
COST YOU LESS and are much simpler to use than plugs, expansion bolts, other devices. Samples free . . . try them. Ask your P-K Distributor, or write: Parker-Kalon Division, General American Transportation Corporation, 200 Varick St., New York 14.

PARKER-KALON®
FASTENERS

For removing a LARGE VOLUME of Fumes or Air at HIGH VELOCITY

allen
VERTICAL DISCHARGE FAN

Whenever you face the problem of discharging fumes or vapors through a roof ventilator so that they will not short circuit back through building openings, you'll find the solution in this new Vertical Discharge Fan. It is designed especially for industrial applications that require the removal of a large volume at high velocity. The "VD" roof fan is fabricated of zinc-coated iron sheet with welded construction throughout. Automatic wing dampers open with air blast, close weathertight when not operating. The "VD" is available as direct drive with motor mounted inside air stream or as "VDR" with motor mounted outside throat of ventilator. Either type is available in a wide range of capacities and sizes.

Write for catalog on complete line of roof ventilators.

ALLEN ENGINEERED VENTILATION
ALLEN COOLER & VENTILATOR INC.
ROCHESTER, MICH.
Roof Ventilators for Every Commercial and Industrial Need

QUIET AUTOMATIC OIL FURNACE

SUSPENDED
OR
LAY DOWN FURNACES

75,000 to 240,000 BTU Capacity
Underwriter's and N. Y. C. approved.

SAVES LABOR • SPACE • FUEL PIPING and MONEY

Other Sizes Up to 600,000 BTU Capacity
Prompt Deliveries

A PRODUCT OF
QUIET AUTOMATIC BURNER CORP.
G. KRAUSE, President
33-35 BLOOMFIELD AVE. · NEWARK 4, N. J.

BEVERLY

Pneumatic
THROATLESS SHEAR

CAPACITY
¾ MILD STEEL
10 GA.
STAINLESS

FASTER,
EASIER CUTTING
to any Shape!

- Compactly built for maximum visibility and efficiency
- Operates on 35 to 150 PSI air pressure
- Adjustable power and return stroke length and speed

Beverly Pneumatic Shears combine all the advantages of Beverly Throatless Shears with fast, effortless cutting action through air cylinder operation. Air operation speeds work, permits accurate cutting to a pattern or template, as operator can concentrate on guiding work through the shear. Flow control valves permit precise adjustment of stroke speed; adjustable actuating arm controls stroke length. Foot Switch permits operator to use both hands on the work piece. Operates on 110V. 60 cycles AC and 35 to 150 PSI air pressure.

See your nearby Beverly Distributor
Write for catalog sheet and complete details.

BEVERLY SHEAR MANUFACTURING CO.
3020 W. 111th STREET • CHICAGO 43, ILLINOIS

FLANGES THE DUCT
with Amazing Speed!
Less than 5 seconds on short and lighter pieces . . .
Slightly longer on bulkier pieces

MAKES PERFECT
DRIVE-CLEATS TOO!

The ONLY tool that does both. A complete drive cleating tool . . . no set-up time . . . no adjustments. Handy to take out to the job when not needed in the shop. Turns idle time into production time. Flanges any square duct up to 20 gauge. Quickly pays for itself in time, material and labor savings.

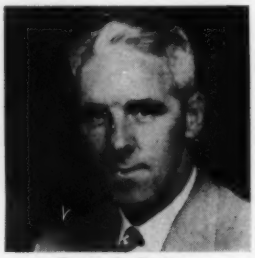
No. 12 Smith's Cleat Bender (12" wide) . . $46.20*
No. 18 Smith's Cleat Bender (18" wide) . . $72.60*
*F.O.B. Waukegan, Illinois
Prices subject to change without notice

PERFECT
DRIVE CLEATS
fit the duct without the use of a screwdriver.
TREMENDOUS SAVINGS
in erection time and labor.

R. E. SMITH
1124 Elizabeth Avenue • Waukegan, Illinois

appointments *(Continued)*

ditioning Co., 9001 San Benito, Dallas has been named distributor to handle the firm's air conditioning, heating and ventilating products in the Dallas county trading area.



Peter J. Dalton

William J. Davies

▸ PETER J. DALTON as product manager of the packaged products section of Worthington Corp's air conditioning and refrigeration division. Mr. Dalton was previously vice president and general sales manager of the Davison Distributing Co. William J. Davies has been appointed district manager of the firm's Cleveland office, succeeding Robert J. Laidlaw. Mr. Davies joined the company in 1937 and has served as application and sales engineer at the Buffalo office and as sales engineer at the Cleveland office.

▸ ARTHUR P. ENNIS as assistant sales manager of the Mor-Sun Furnace division of Morrison Steel Products, Inc. Mr. Ennis joined the company in 1947, became service manager for the Mor-Sun division in 1950 and later served as a sales engineer.

Arthur P. Ennis

Donald J. Harrington

▸ DONALD J. HARRINGTON as manager of marketing for the General Electric Co.'s appliance control department. Mr. Harrington, previously manager of specialty capacitor sales for the capacitor department, will be responsible for the marketing and sales of controls for home heating applications. He has been with the company since 1937. N. M. Adema & Son, 39 W. Balcom St., Buffalo, has been named a retailer for the company's home heating and cooling department and will distribute residential warm air heating and cooling equipment in Erie county. F. B. Gardner Co., 1780 Menaul Rd., N. E., Albuquerque, has been named a distributor and dealer for packaged air con-

YOUR BEST INVESTMENT

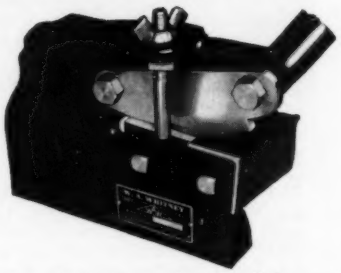
LEVER **WHITNEY** PUNCHES

PORTABLE HAND OPERATED PUNCHES AND SHEARS. A TOOL FOR EVERY PURPOSE. LEADERS SINCE 1907

Please Write Today for Literature

See Your Jobber

CHICAGO STEEL SLITTING SHEAR



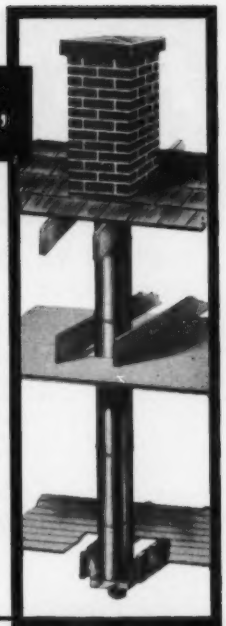
For slitting long sheets and for cutting steel bars, band iron, etc. Main frame one piece steel casting with offset for clearance in cutting long sheets. Capacity 3/16 x 2" bars, 10 gauge sheets. Blades are made of high grade tool steel. Equipped with adjustable hold down.

W. A. WHITNEY MFG. CO.

636 RACE ST. ROCKFORD, ILL.

Now!

NEW AIR-JET "BRICK BEAUTY"



Why bother to build a chimney? Now you can enjoy all the time and money-saving advantages of an Air-Jet packaged unit . . . and, at the same time, increase the value of your homes with a chimney that looks just like brick!

The new "Brick Beauty" is made of embossed aluminum, finished in brick red color with depressed off-white mortar lines. Weighs less than 100 lbs.! Can be installed in one man-hour! And look at these quality features.

Shockproof, high temperature porcelain steel smoke pipe. Special draft top guards against downdrafts. Exclusive rain groove eliminates all leakage. UL approved for use with all fuels. You can take your choice of 2 models in 3 different smoke pipe sizes.

WRITE TODAY
for complete information!
A few distributorships available.

GENERAL PRODUCTS COMPANY, INCORPORATED
DEPT. B-7
FREDERICKSBURG, VIRGINIA

• A PACKAGED CHIMNEY WITH AUTHENTIC BRICK LOOK

THIS AUTO REPAIR SHOP USED 6 HEATING UNITS . . . *until 3* Delta OIL UNIT HEATERS *took over!*

PROBLEM: The 6 old-fashioned heaters in this Pontiac agency and repair shop were expensive to operate and required costly repairs quite often.

SOLUTION: 3 Delta oil-fired unit heaters replaced them. Installation was easy and cost surprisingly little because they required no boilers, pipes, fittings, valves, etc. They're factory wired and completely assembled . . . all ready to hang up.

RESULTS: The building was comfortable throughout the winter; no maintenance was required and operating costs were reduced 60%.

Send for complete new catalog

This is only one of hundreds of jobs that a Delta OIL Unit Heater can do better and more economically.

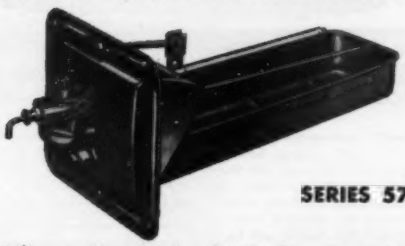
DELTA HEATING CORPORATION
TRENTON 8, NEW JERSEY

COMPLETELY ASSEMBLED

Vaporite

AUTOMATIC HUMIDIFIER

OFFERS QUICKEST – FASTEST INSTALLATION
ADJUSTABLE TO SLOPING OR STRAIGHT BONNET FURNACES



SERIES 577

Stainless steel construction. Drip-feed puts just enough water in pan for fastest vaporization. Eliminates scum . . . no stagnant water pan.

Pre-assembly cuts labor time and costs. To install simply cut hole in plenum wall, slip VAPORITE in just as it comes from shipping package.

Get complete information. Write. A-7.

Automatic Humidifier Co.
CEDAR FALLS, IOWA

FASTER HEAT
LONGER FURNACE LIFE

JOHNSON No. 15
Melting-Pot Furnace

Melts its capacity of lead in less than 10 minutes. Has powerful No. 5 Type A Johnson Patented Direct Jet Bunsen Burner with shut-off valve; pilot light; very economical; takes hardest use. Ideal for all small quantity melting.

JOHNSON No. 105
Bench Furnace

Two-burner unit heats soldering coppers up to 12 pounds per pair. 3" dia. x 4" deep 10-lb. - capacity cast iron pot—for melting lead, babbit, tin, zinc, etc.—fits in hood when lid is removed.

If It Burns Gas Look To
JOHNSON
Since 1901

Write today for complete information
JOHNSON GAS APPLIANCE CO.
580 E Ave. N. W. Cedar Rapids, Iowa

Convert Gravity Furnaces With A CIRCULATAIRE Bonnet Blower

CIRCULATAIRE ELIMINATES COLD ROOMS, BALANCES HEAT DISTRIBUTION, SAVES FUEL

CIRCULATAIRE solves the problem of "hard to heat" rooms, boosts warm air quickly through all the heating pipes. CIRCULATAIRE is easily and quickly installed without removing the bonnet. Packaged unit includes motor and fan control. No new sheet metal work required, no changing of cold or warm air pipes, no baffles to be built. The CIRCULATAIRE is rigid, quiet and efficient in operation.

NOW READY—*New CIRCULATAIRE Sales Aids add effectiveness to selling interview, conserves valuable selling time and increases sales.*

A COMPLETELY PACKAGED UNIT
Nothing for the dealer to furnish except limited amount of labor.

GET THE FACTS TODAY! WRITE...
CIRCULATAIRE DIVISION OF CORLETT-TURNER CO.
1007 S. KOSTNER AVE., CHICAGO 24

appointments *(Continued)*

ditioners in the state of New Mexico for the commercial and industrial air conditioning department. Florida General Supply Corp., with headquarters at 5040 Biscayne Blvd., Miami, has been named a wholesaler of packaged air conditioners and "Weathertron" products in the state of Florida. The South Bend Electric Co., Inc. 437 E. Colfax Ave., South Bend, Ind. will distribute "Weathertrons" in the states of Michigan and Indiana. "Weathertron" products will be distributed in the Illinois and Missouri area by Automatic Heating Supply, Inc., 2428 S. MacArthur Blvd., Springfield, Ill. Seither & Cherry Co., Inc., 25 S. Fifth St., Keokuk, Iowa has been named a retailer for "Weathertron" products in parts of Illinois, Indiana and Missouri.

▸ CLETUS J. OSTER as plant superintendent of the Farr Company. Mr. Oster previously served as project engineer and has also acted as assistant chief engineer.

Cletus J. Oster

Richard K. Trask

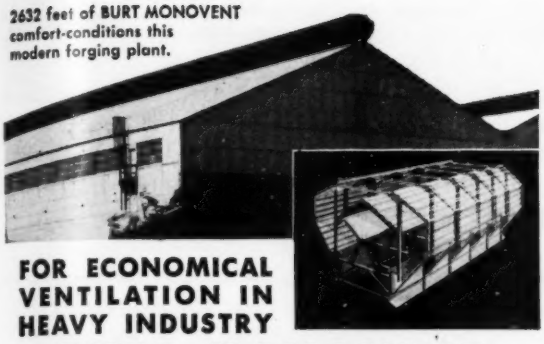
▸ RICHARD K. TRASK as manager in charge of distributor sales of L.O.F. Glass Fibers Co. In his new position, Mr. Trask will supervise sales of the firm's thermal and acoustical insulation products through a national network of industrial distributors.

▸ M. D. BELLWARE as a member of the welding group of the technical service section of International Nickel Co., Inc. Formerly Mr. Bellware was a welding engineer on U. S. Atomic Energy Commission projects at Oak Ridge.

▸ H. RICHARD HARPER as manager of equipment sales for the L. O. F. Glass Fibers Co. He will headquarter at the firm's general offices in Toledo. In his new position, he will supervise sales of the company's thermal and acoustical insulation products to manufacturers of air conditioners and warm air furnaces.

▸ C. L. PURSELL, 1616 Second St., Jackson, Mich. as representative for Fairmont Aluminum Co. covering the state of Michigan. George E. Sandberg Co., 6111 Excelsior Blvd., Minneapolis 16 has been as-

2632 feet of BURT MONOVENT comfort-conditions this modern forging plant.



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CONTINUOUS RIDGE VENTILATOR

IS YOUR BEST BUY!

Where high heat or fumes require the removal of large volumes of air, Burt Monovent exhausts more air per dollar than any other ventilator. It provides uniform ventilation of the entire structure — in effect, converts the roof ridge to a quick-acting giant air valve. The Monovent is economical to install, operate and maintain and highly efficient.

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DIRECT OIL FIRED

WATER HEATER

- For Homes, Apartments, Industries
- ASME Constructed
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- Fuel Supply from Heating Unit Tank
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High and Low Pressure Oil Burners • Shell Head Burner • Winter Air Conditioner • Submersible Sump Pump • Utility Pump • Sump Pump

Write for complete literature on all Radiant products.

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WINDMASTER the modern draft control that

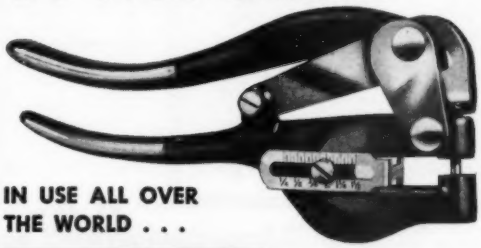
"MOUNTS on ANY PITCH!"

on the side of the pipe

It pays to say "WINDMASTER" to your jobber

Windmaster Corp. 43 Vine St. Columbus 15, Ohio

THE GREATEST PUNCH WE EVER MADE...



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CAPACITY MILD STEEL ¼" thru 16 ga.

IN METAL BOX WITH 7 PUNCHES AND DIES

Write for BIG NEW CATALOG

WHITNEY METAL TOOL CO.

702 Forbes St., Rockford, Illinois, *Since 1910*

appointments *(Continued)*

signed territory covering the state of Minnesota and a portion of western Wisconsin. The new representatives will provide technical advisory services and will handle sales of aluminum coils, circles and sheets.

▸ R. W. BINGHAM as manager of terne and roofing sales for Follansbee Steel Corp. Mr. Bingham formerly was vice president of Albert P. Hill Co., Inc., the Follansbee firm's advertising agency.

R. W. Bingham

Roy J. Pearce

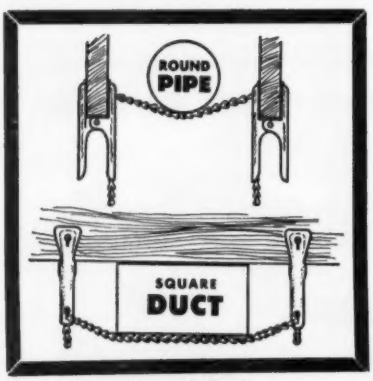
▸ ROY J. PEARCE as sales representative for the Janitrol Heating & Air Conditioning division of Surface Combustion Corp. Mr. Pearce will cover the Brooklyn and Queens areas and will headquarter at 225 Broadway, New York 7. He has been associated with the heating and air conditioning industry in the New York-New Jersey area for 28 years.

▸ E. M. BOLLAERT as superintendent of Van-Packer Corp.'s manufacturing plant at Buda, Ill. Mr. Bollaert will have charge of production of the firm's packaged masonry chimneys.

▸ CLARENCE B. BERGREN as manager of the Milwaukee branch of Thor Power Tool Co. Robert J. Grace, formerly service engineer in the Indiana territory of the Chicago branch, has been appointed to succeed Mr. Bergren as Cleveland branch manager.

▸ ROBERT R. MCKELLAR as New York district sales manager of Connor Engineering Corp. He was formerly with J. O. Ross Engineering Corp. as sales engineer for the New Jersey and New York State territories.

▸ THE MUTUAL MFG. AND SUPPLY CO., Cincinnati as wholesale distributor for southern Ohio, northern Kentucky and southeastern Indiana for the Airtemp division of Chrysler Corp. Acme Furnace Fitting Co., 2124 W. 82nd Pl., Chicago has been named distributor of residential air conditioning and heating equipment in the Chicago area. J. E. Fox has joined the



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Want a helper when hanging duct?

Like an extra pair of hands, these strong spring-powered clamps, with adjustable chain, will hold up one end of any type or size duct while other end is being connected. Price per set . . . $3.75.

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Copper - Brass - Bronze
Perforated
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PERFORATED METALS
FOR ALL INDUSTRIAL USES
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Zinc Ornaments Available From Stock. Copper, brass, bronze, aluminum and stainless steel ornaments made up promptly.
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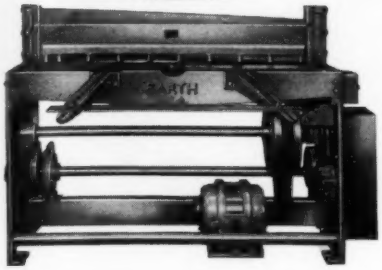

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Barth heavy duty squaring shears handle up to 96 inch lengths, feature alloy steel laid blades, self-locking hold-down, 2 wheel precision back gauge . . . front, side and bevel gauges.

Power shears (illustrated) are the compact *under-driven* type . . . may be operated on non-repeat.

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BOSTON DRAFT STABILIZER

WORLD'S MOST ACCURATE DRAFT CONTROL

Guarantees Constant Draft and protects your heater against these variables that destroy efficiency!

Now Available in 6", 7", 8", 9" and LARGER SIZES up to 24". All available with or without TEE section. TOPS in ability to hold draft yet the SIMPLEST to install.

No Weights To Adjust. Can be properly set, even without instruments.

OPERATE YOUR HEATER AT PEAK EFFICIENCY with *ACCURATE* DRAFT CONTROL

BOSTON DRAFT STABILIZER

1. Slows down travel of gases thru the heater to a desired CONSTANT speed so heater can absorb the heat before it reaches the stack.
2. Holds a constant draft because variations in draft-pull result in changes of air delivery from the burner fan, causing changes in smoke content and CO_2 of your combustion.

Write for complete details

BOSTON MACHINE WORKS COMPANY
Oil Heating Supplies Division. Manufacturers. Lynn, Mass.

"CORRECT PRACTICE in OIL HEATING"

NOW AVAILABLE TO YOU!

A complete reprint of the valuable series

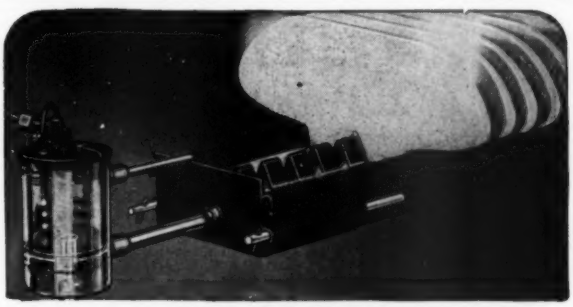
by J. J. Mirabile

This practical series covers every angle of oil burner work, including arrangement of shop . . . stocking of parts . . . record-keeping . . . installation procedures . . . the handling of crews . . . how to make heating surveys . . . how to size combustion chamber . . . how to install thermostat . . . how to start the burner . . . how to use testing instruments . . . and how to operate a service department. It contains, as well, a complete list of causes and cures of oil burner troubles that will serve as a reliable guide in making service calls.

Every shop handling oil burner jobs should own this book. Full size, 8½ by 11 inches — 57 pages of practical helps. Send $1.00 for a copy to the address below.

KEENEY PUBLISHING COMPANY

6 No. Michigan Avenue **Chicago 2, Ill.**



There's a PROPER SIZE Monmouth for every Heating Unit

Monmouth does not offer just one size Humidifier for all heating units. It provides a complete range of sizes and capacities to do the job properly — for the correct size pan and correct number of plates are essential to efficient operation. This is especially vital with modern automatic forced air heat, with relatively low bonnet temperature, where sufficient diffusion to convey moisture to the volume of air handled is absolutely necessary. When you install the proper size Monmouth, your job is not half done, but ALL done. The complete line includes various Flotrol Models — the No. 310 for your smaller jobs and the Monmouth gas-fired Humidity Conditioner for all radiator systems. Write for descriptive Bulletins.

THE CLEVELAND HUMIDIFIER CO.
7802 Wade Park Avenue **Cleveland 3, Ohio**

MONMOUTH HUMIDIFIERS

appointments *(Continued)*

staff of Central Distributors, Nashville, to direct all wholesale distribution of the division's products in middle Tennessee.

▸ O. V. SPOUSTA, formerly with the Louisville branch of Minneapolis-Honeywell Regulator Co., as manager of the company's newly opened office in Hammond, Ind. W. C. Waltman has been transferred from the South Bend office to Louisville, and George Rossiter will replace Mr. Waltman as manager of the South Bend district office.

▸ I. LAMAR KING as a sales representative for the Trane Co., working out of a newly established branch sales office in Tampa, Fla.

▸ ARAMAC SUPPLY CO., Cincinnati as exclusive distributor of gas and oil home heating equipment in parts of Ohio, Kentucky and Indiana for the Toridheet division of Cleveland Steel Products Corp.

▸ A. I. WALLACE as sales representative for northern Illinois and parts of Michigan, Indiana and Wisconsin for Temco, Inc., Mr. Wallace has been associated with the gas industry since 1926 when he joined the sales staff of American Gas Products Corp. Prior to joining Temco, he was with Rasch Mfg. Co.

William J. Darragh

Richard W. C. Barr

▸ WILLIAM J. DARRAGH as manager of the New England district office in Hartford for General Controls Co. Mr. Darragh joined the company's Newark branch in 1950 as a warehouseman and was promoted to sales engineer in 1952. Prior to his recent promotion he was manager of the Boston branch, in which capacity he is being succeeded by Richard W. C. Barr. Mr. Barr was formerly with White-Rodgers Electric Co.

▸ ROBERT B. SWIFT as a sales representative for the Delco Appliance division of General Motors Corp. Mr. Swift will operate in the Boston area. Other sales representatives recently added to the division's sales force are Frank McGraw, who will cover Newark; Edward

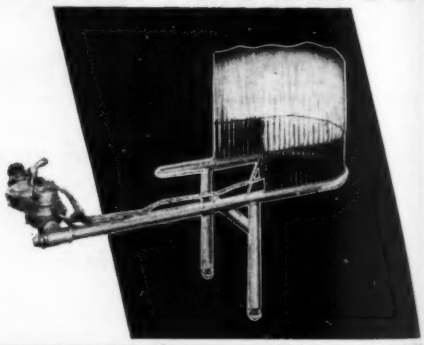
SUPER-JET GAS CONVERSION BURNER

. . . is the answer!

Super-Jet's advanced engineering has developed a silent, automatic, *multi-jet* type conversion unit for complete heating comfort.

This burner generates own current for completely automatic and safe operation, not dependent on any outside source for current. Designed for natural gas — certified by AGA — with a consumer guarantee.

Some territories still open for manufacturers' representatives calling on wholesalers.



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"WA-TROL"

Makes AIR-FLOW CONTROL SIMPLE, QUICK, POSITIVE!

• Economical — made of famous Styrene — Positive positioning at a glance — Sure spring lock mechanism — No cumbersome tools or troubles — It looks good, works right; is time tested — Saves 50% on balancing of installations. • Ask your wholesaler for Wa-Trols.

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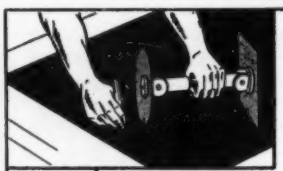

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LAYOUT ANY PATTERN COMPLETE IN MINUTES.

ATTACH TEMPLATES, ADJUST FOR PITCH OR OFFSET AND ROLL OUT PATTERN.

ONLY $69.50 COMPLETE WITH 30 TEMPLATES

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MORE *Rigid*...LESS *Cost*

ONE PIECE
BLOW PIPE ELBOW

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Cheaper and stronger than the ordinary pieced elbow, KIRK & BLUM'S One-Piece Elbows are rolled into a tube, then crimped on an exclusive machine to form a super tight, rigid elbow. These and other blow pipe parts, made in production quantities, are superior, cost less than the ordinary kind. Made in light to heavy gauges, from 3-inch to 14-inch diameter. Write for literature and prices.

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Any Size

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STYLE "K" END PIECE WITH OUTLET

Look for Quality When You Buy

Sizes 4" and 5" with Oval Outlet fits 3" round or 2"x3" square pipe.

Sold through leading jobbers everywhere.

Made in all metals: Galvanized, Stainless Steel and Copper.

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BERGER BROS. COMPANY
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"CORRECT PRACTICE in OIL HEATING"

NOW AVAILABLE TO YOU!

A complete reprint of the valuable series

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This practical series covers every angle of oil burner work, including arrangement of shop . . . stocking of parts . . . record-keeping . . . installation procedures . . . the handling of crews . . . how to make heating surveys . . . how to size combustion chamber . . . how to install thermostat . . . how to start the burner . . . how to use testing instruments . . . and how to operate a service department. It contains, as well, a complete list of causes and cures of oil burner troubles that will serve as a reliable guide in making service calls.

Every shop handling oil burner jobs should own this book. Full size, 8½ by 11 inches — 57 pages of practical helps. Send $1.00 for a copy to the address below.

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the most ideal draft-free perimeter type air distribution system ever developed for heating, cooling, and ventilation.

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SELL THIS "PERFECT CAP"

Draft King

for Chimneys — Flues — Ventilators

"Draft King" eliminates Draft Troubles, acts as spark arrester, creates even stack temperature, improves combustion and cuts fuel costs. Field tested with all types of units everywhere. Will not freeze shut or soot up.

Improved features give long life. New cap adaptors are now available in galvanized steel or aluminum for all size flues, ventilators and chimney stacks. Caps may now be installed in a matter of minutes. Contact your favorite distributor, or write:

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ELGO AUTOMATIC SHUTTER for Unit Blower

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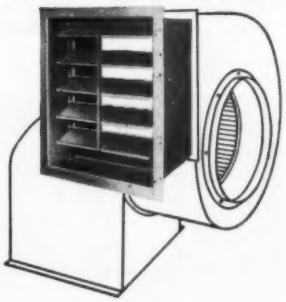
Self-contained in adapter sleeve for attachment to blower. Louvers of light gauge aluminum with felt silencer strips. Rustproof hinge rods. Weatherstripped. Built to fit your blowers.



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Permanent aluminum sodering is made simple and easy with AL-LEN Alumi-Soder. Complete in itself, flux and soder are combined in exactly the right proportion in a convenient "handy-to-use" stick.

TRADE MARK ALLEN REG. U.S. PAT. OFF.

L. B. ALLEN CO. INC.
6702 Bryn Mawr
Chicago 31, Ill.

appointments *(Continued)*

A. Tarver, who will operate in Atlanta; James R. Snellen, who will work in the Louisville area; and Leonard G. Towle, who will cover Kansas City, Kans.

W. L. Yeager

J. W. Ellsworth

W. D. Wiscomb

▸ WILLIAM L. YEAGER as central east district manager for Waterman-Waterbury Co. Mr. Yeager's headquarters will be at Columbus. J. W. Ellsworth has also been named a district manager for the company and will have offices at Des Moines, Ia. William D. Wiscomb, with headquarters at Salt Lake City, will cover Colorado, Utah, Wyoming and Idaho.

▸ THE NORRIS BLANCHARD CO., INC., Omaha as sales representative in the states of Nebraska, North Dakota and Iowa for Shana Mfg., Inc. The Cooper Distributing Co., Cleveland has been named distributor for the company's products in the Cleveland area.

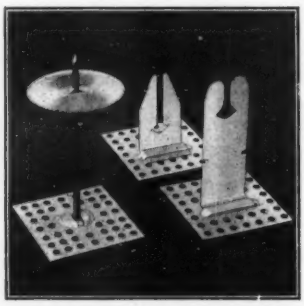
▸ FERRIS & CO., 422 W. Roses Rd., San Gabriel, Calif. as representative in the southern California territory for Fenway Machine Co.

Obituary

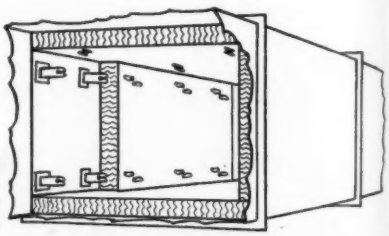
Edwin A. Scott

EDWIN A. SCOTT died Sunday, June 26, 1955 at Lawrence Hospital, Bronxville, after a long illness. He was 77 years old. Mr. Scott was chairman of the board and publisher of Scott-Choate Publications, publishers of *Heating Air Conditioning Sheet Metal Contractor* and other allied publications. He was also president of the Edwin A. Scott Publishing Corp., publishers of technical books and manuals for the plumbing, heating and air conditioning field. Mr. Scott was active for many years in various associations, having served as secretary of the American Society of Heating and Air-Conditioning Engineers and also as chairman of the publication commitee of the Sheet Metal Contractors' National Association. He is survived by his daughter, Helen Lyons Scott, and his son, Edwin A. Scott, Jr.

APPLY INSULATION EASILY, ECONOMICALLY



Stic-Klips permanently bind almost any insulating substance to masonry, wood, metal — flat, corrugated, curved, unusual-shaped. Eliminate drilling, puncturing metal. This modern method is used for heating, ventilating, air conditioning, processing equipment, cold storage, acoustical, marine installations.



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Write Dept. A.A., for illustrated booklet on any of these applications.

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In Stock - Ready for You -

most sizes of the famous

Swartwout Rotary

Quick delivery!

The Swartwout Co.

18511 Euclid Ave., Cleveland 12, Ohio

MANUFACTURERS OF

FURNACE PIPE AND FITTINGS,

Prefabricated Ducts,

also conductor pipe, eaves trough, drip edge, rake strip, etc.

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Rates for classified advertising are 12 cents for each word, including heading and address. One inch $6.00. Count nine words for keyed address. Minimum $2.00. Closing date 20th of month preceding publication.

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OUTSTANDING OPPORTUNITY FOR EXPERIENCED SALESMAN — A large and well known manufacturer of heating and air conditioning equipment has openings in its salaried sales organization for men to cover territories in the Southwest, including Oklahoma and Southern Missouri, Texas, Arizona and New Mexico. Men selected will have had experience in selling heating and air conditioning equipment at the trade level and will have a good technical knowledge of heating and cooling application, installation and service problems. These men will be interested in upgrading dealers to help them sell more and become better merchandisers. They will be 45 years or less, energetic and willing to work hard at building a good future for themselves. These men will be keenly interested in the many benefits available to them in joining this company. They will be paid a salary, expenses and have opportunity to increase their income through a bonus plan. If you believe that you qualify for one of these openings and would like to "talk it over", submit a resume of your background, experience and salary expected. Your inquiry will be held in strictest confidence. Address your replies to Key 997, American Artisan, 6 North Michigan Avenue, Chicago 2, Illinois.

Two (2) Sheet Metal Men. First class all around mechanics. Must know layout, fabrication. 28 to 35 years. Only ambitious men need apply. Union shop. Write stating qualifications, AMERICAN SHEET METAL, 2709 Halladay, Santa Ana, Calif.

HELP WANTED — Experienced man or beginner in take-off quantities on ductwork and ventilating systems, New York area. Reply giving experience and starting salary desired. Address Key 992, American Artisan, 6 North Michigan Avenue Chicago 2, Ill.

for sale . . .

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MANUFACTURERS AGENTS — Furnace Pipe and Elbows, Prefabricated Duct and Fittings. Young agressive organization desires representation in the following areas: Western Pennsylvania, Ohio, New York, Virginia, West Virginia, North Carolina, South Carolina and Georgia. Superior product, excellent advertising, adequate compensation. Please write Maurlee Co., Inc., South Evergreen Ave., Woodbury Heights, N. J.

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Handles up to 3" wide, 22 ga. or lighter. Hand or foot operation. Mounts on bench, or on job with clamps, or bolts and screws.

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For fastening slips or seams on ducts. Will push a "half moon" through 3 thicknesses of 18-ga. steel. No hammering or flattening out to fasten slip to the duct.

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Fastest and most accurate on the market. Two sizes for circles up to 36" and 48". Removable steel points, or pencil. No center punch.

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Registers and Grilles
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Look into the advantages offered in the Wodack "Do-All"® Combination Electric Hammer and Drill. It's standard equipment with contractors in all branches of building construction and maintenance. Let me send you literature describing this tool that has taken the hard labor out of drilling concrete, brick and stone. Drills metal and wood equally well. No better drilling tool made for sheet metal shops. A postcard will bring you full information. Oscar P. Wodack, Pres., Wodack Electric Tool Corp., 4627 W. Huron St., Chicago 44, Ill.

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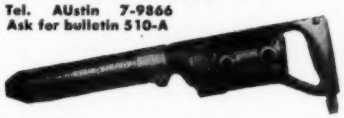

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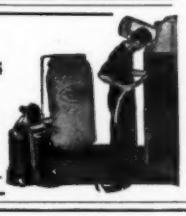

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